American Aviation

The Independent Voice of American Aeronautics

APRIL 15, 1944

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APR 18 1944
DETROIT

...ternational Progress

...W THAT preliminary air talks ...ave begun with Great Britain, ...a and Russia, the extent to which the United States should become committed to international collaboration on postwar international aviation matters becomes of utmost im...ance.

...ntightly Review

...eat Britain and Canada have each ...osed the creation of an Interna...al Air Transport Authority, a type ...Civil Aeronautics Board to control ... regulate global air transport but ...e even more power in certain direc... than our own CAB exercises. ...t the Russians want is not yet ...wn but one would doubt, on the ...s of past record, that the Russians ... interested in such an elaborate ...p as an IATA.

...e doubt, also, that the United States ...r needs or desires such an inter...nal control, and especially do we ...t whether the U. S. Senate would ...e ratify a convention creating such ...uthority.

...ternational air transportation is not ...ly so complex as some nations and ...ests would have it become. Within ... single realm of regulated competi..., with reasonable commercial agree...ts and freedom of operators to de...p air services in the public interest ...ject to minimum regulations, the ...tion to postwar aviation should not ... difficult to find. But it won't be ...d either in unreasonable restric...s on the one hand, nor in the realm ...n International Air Transport Au...ity on the other.

...s interesting to note that both the ...ks and Canadians propose to regu... and control frequencies of sched...

(Turn to page 9)

Model 39 Engineer

I. M. Laddon, Executive Vice President of Consolidated Vultee Aircraft Corp., directed engineering on Convair's Model 39 postwar, long range transport plane which has just been unveiled. The prototype is scheduled to be flown at San Diego this month. (Page 18)

Late Bulletins

Predicts Plane Sales

U. S. airlines will buy 1,700 new transport planes valued at $512,500,000 within two years after the war, E. E. Lothrop, manager of the Aeronautical Chamber of Commerce's research and statistical department, told Harvard Business School alumni April 10.

Russian Talks Scheduled

Air talks between U. S. and Russian representatives are scheduled to open in the near future, a reliable source said April 11. Part of the Russian mission will come from Moscow and Russia officials in the U. S. are also expected to participate, it was said.

Trend of The News

Industry Get-Together: The joint meeting of Aircraft War Production Councils opening in Los Angeles April 24 may represent a genuine getting together of the manufacturing industry in several respects. After innumerable false starts in the past two years, it is the consensus in the industry now that this meeting will mark the actual reorganization of the Aeronautical Chamber of Commerce as a positive vehicle for postwar planning for the industry. A "paper meeting" of the membership on April 11 elected the presidents of major aircraft firms as governors of the Chamber, putting its destiny in the hands of the top bracket men who are now expected to take a much closer personal interest in it—rather than assigning Chamber matters to Washington representatives as a secondary activity.

McCarran Bill: Sen. Pat McCarran (D., Nev.), co-author of the Civil Aeronautics Act of 1938, has reported that he wants his new "super" aviation bill (*American Aviation*, April 1) to "soak in" and will not press for hearings on it for some time. Definitely, however, he said he would push for Committee action before the present Congress adjourns.

P. O. Attitude: Officials concerned with air mail at the Post Office Dept. have had comparatively little to say at CAB new route hearings and have generally confined their participation to presentation of statistical exhibits. It is still too early to say whether this attitude is changing, but officials viewed with no little surprise the recent letter written to CAB by Second Assistant Postmaster General Smith Purdum definitely favoring establishment of a northern transcontinental air route (Milwaukee-New York, sought by Northwest Airlines) by-passing Chicago. The PO has seldom gone on record this strongly. Also, the PO is more convinced than ever that the airlines need more planes—and may say so.

Watch Republic: A year ago industry circles buzzed with talk about the future of such companies as Republic Aviation Corp whose only product to date has been military airplanes. But the talk is changing with regard to Republic. A super-fast transport of medium seating capacity and long range possibilities, incorporating lessons learned from the P-47 Thunderbolt, is in the wind. So are some

(Turn to page 6)

20c

After Victory many more Americans will be saying

"Buenos Dias, Vecino" and "Bom Dia, Meu Vizinho"

Yes, we'll be saying, "Good Morning, Neighbor," to our Spanish and Portuguese speaking friends in South America, a lot more often—after Victory.

Then, improved aircraft and a vastly expanded network of airlines, will bring the Americas so close together that trips may be measured in hours—rather than days.

St. Louis to Sao Paulo, Rochester to Rio, Boston to Buenos Aires, Birmingham to Bogota, St. Paul to Santiago—such trips will become almost as commonplace as a St. Louis to New Orleans flight today.

Right now, of course, production for war comes first. That's why, at McDonnell, we're working three shifts a day, making planes, parts, and plastics for America's Armed Forces.

But we're making plans even now to supply the type of aircraft which will help South Americans to a quicker realization of the rich future which is theirs. Yes, after Victory, McDonnell too, expects to be saying, "Buenos Dias, Vecino."

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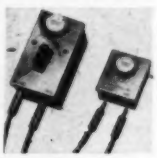
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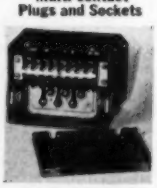
Retractable Electrical Koiled Kords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American Aviation

Vol. 7 No. 22 April 15, 194

World Conference Talks Continue . . 15
AAF Stops Civilian Training 17
Convair's Model 39 Unveiled 18
March Plane Output Probable Peak . 24
Canada's Private Airlines 'Here to Stay' 25
Oppose Weight Increases of Transports 37
Test Sale of Surpluses Conducted . . . 75

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ARMY E NAVY

WITTEK Aviation HOSE CLAMPS

Trends

(Continued from page 1)

other fancy projects that don't appear to be dreams to those who know about them. Don't under-estimate Republic.

Burden's Duties: In addition to his responsibility as the Civil Aeronautics Administration, William A. M. Burden who was sworn in last fortnight as Assistant Secretary of Commerce, will also be responsible for the Weather Bureau and Coast and Geodetic Survey—a tie-up which will coordinate many factors of importance to the aviation industry.

CPFF Contracts: The form of contract has little effect the efficiency of workers in the aircraft industry, according to confidential report War Manpower Commission has submitted the Senate Military Affairs subcommittee on war contracts. The report analyzes worker productivity in aircraft and shipbuilding plants under cost-plus-fixed-fee contracts compared with productivity under fixed-price contracts, in an effort to ascertain whether CPFF contracts induce extravagance and labor-hoarding. It is understood that should the report ever be released it would show that pounds of production per manhour under CPFF contracts for aircraft are identical with those under the fixed-price type by the time the 3000th plane has rolled off the assembly line.

Agreed on Termination: Substantially in the form that is expected to pass the Senate, new contract termination legislation, revised in various respects, has been presented to Congress. Sen. George's Postwar Committee, Sen. Murray's Military Affairs Subcommittee and the Baruch Committee representing the Administration are pretty thoroughly agreed on its provisions.

Prinicipal provisions are: (1) A director of contract settlements who would supervise the termination process; (2) interim financing; (3) removal of machinery and materials from contractors' plants; (4) appeals from termination settlements. Under the changed draft, the Director is made solely a policy setting and supervisory official and actual termination operations would be conducted through the Government agencies which made the original contracts. Also, it would be permissive—not required—for the Government to supervise payments by prime contractors to sub-contractors.

Airline Equipment: The domestic airlines now have 4,000 airplanes and everyone agrees that they need more. According to reports, the Army has some it is willing to release, provided the situation is straightened out with the White House, which two years ago issued an order generally interpreted to mean that the fleet should not exceed 200. However, very closely tied in with return of planes is the airline manpower situation. It remains to be seen how the airlines make out on manpower (especially under 26) and this must also be straightened out before the talk turns to planes.

Plane Disposal: While the aircraft sub-committee of Wm. Clayton's Surplus Property Administration will not contain representatives of the industry, it has been determined that industry and other interests concerned will be given full opportunity to express their views toward a solution of the problem of surplus plane disposal after the war.

CAB Chairman L. Welch Pogue was named by Clayton as chairman of the aircraft sub-committee. William A. M. Burden also will be a member. Other personnel of the group has been in the process of selection but announcement has been withheld pending completion of the committee.

Trend of recommendations in some quarters is toward the leasing of transport (converted cargo) equipment to U. S.-owned airlines with a time limitation arranged so that the airlines can purchase new equipment as soon as it is available. It seems unlikely that surplus aircraft can be leased to foreign countries or companies, however, so a sales price will be established in such a way as to protect the U. S. markets for new equipment.

Leaving Planes Abroad: A significant trend in the thinking of aircraft manufacturers is disclosed in a recent inquiry by the Aeronautical Chamber of Commerce. Aircraft located abroad at the end of the war should be left there, manufacturers of military aircraft agreed almost unanimously in answering a Chamber survey. They also agreed that disposition of surplus aircraft both at home and abroad should be handled by the manufacturer originating the design.

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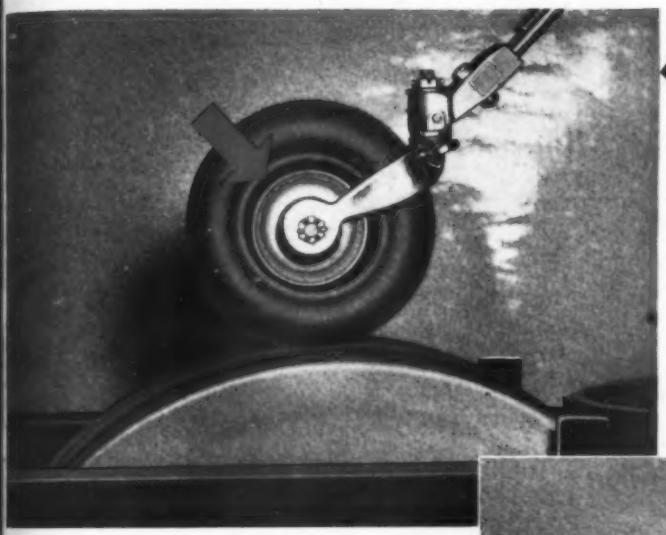

Photo shows competitive 6 x 2.00 tail wheel tire on test machine in laboratories of Scott Aviation Corporation—being rotated at equivalent of 30 miles per hour. Note how centrifugal force has separated beads of tire from the wheel. (arrow). Scott Aviation say, "...all (competitive tires) tested behave in exactly the same manner as the competitive tire pictured."

General 6x2.00 Tail Wheel Tire—on same wheel as above—at same speed. *Note complete lack of any distortion.* Note how it hugs the wheel perfectly ...without any separation. Scott Aviation say, "General's steel wire bead makes it impossible for the tire to be thrown from the wheel."

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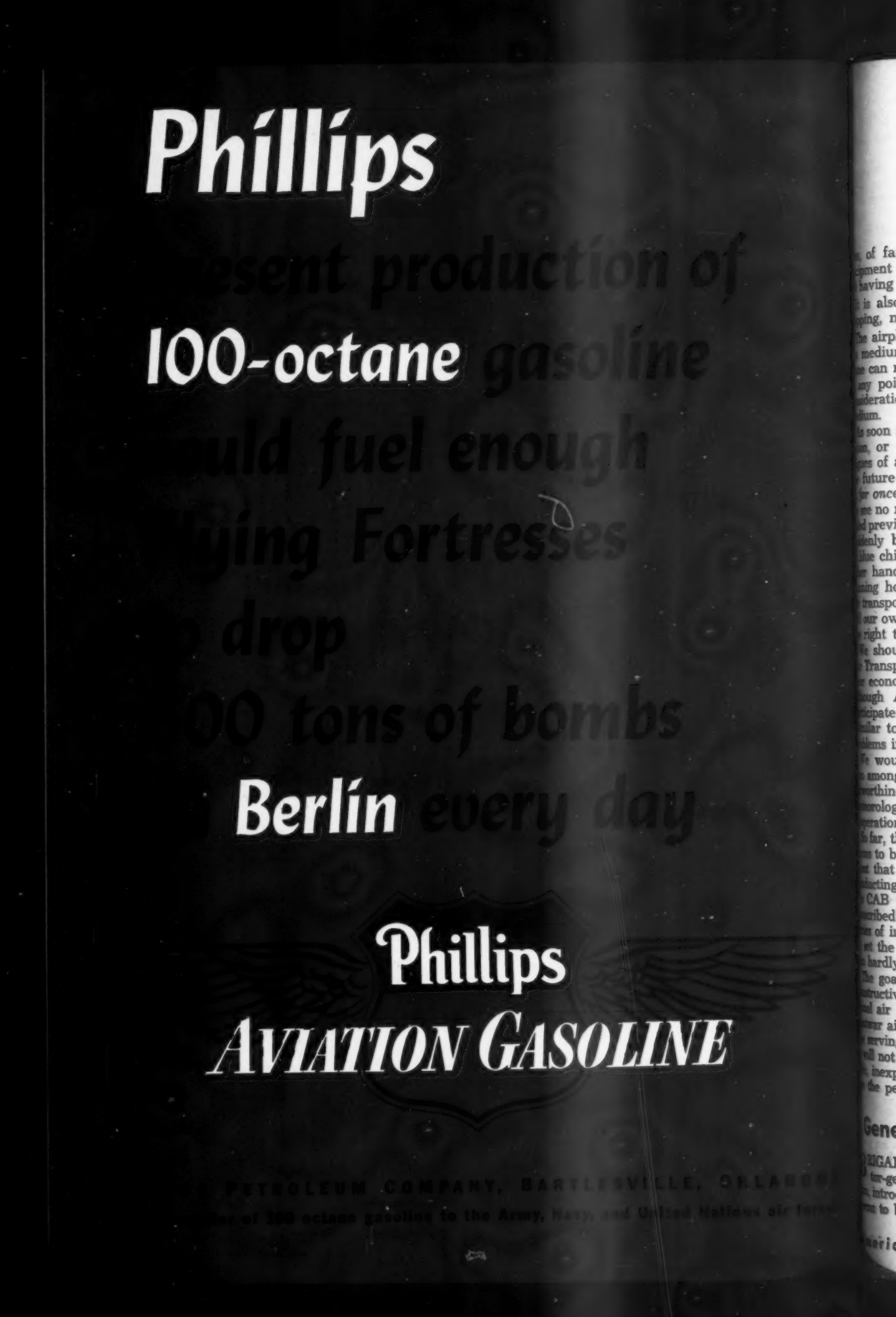
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Editorial

(Continued from page 1)

s of fares, and to exercise rigid regulations over
pment with compensating factors for those nations
having certain advantages in superior equipment.

t is also interesting to recall that in the realm of
ping, no such restrictions were ever proposed.

The airplane should be treated very much as a ship
medium of transportation. The fact that an air-
e can not only cross over water but also fly inland
any point it desires, should not be an obstacle to
sideration of the airplane as a flexible transport
dium.

As soon as an effort is made to cartelize air transpor-
on, or to bundle it up into the red tape and in-
ues of an international government-operated IATA,
future of the airplane is immediately beclouded.
for once, the United States has a pile of blue chips,
see no reason why the competitive rules which have
d previous modes of transport internationally should
denly be discarded in order to distribute our pile
blue chips so that everyone can start even. On the
r hand, we certainly do not advocate the U. S.
ing hog-wild and endeavoring to dominate world
transport. There's room for all; but we shouldn't
our own seat at the table now that we have earned
right to play in the game.

We should oppose participation in an International
Transport Authority which has power and control
economic matters such as frequencies and fares,
ough American operators would be expected to
ticipate in any international association of operators
ilar to the prewar IATA of Europe) to work out
blems in a self-governing manner.

We would favor, however, international collabora-
among governments on technical matters such as
worthiness, safety minimums, communication,
eorology, and the like. On the technical level full
peration and collaboration will be desirable.

So far, the road the present Administration has taken
ms to be a sound one. First was the internal agree-
nt that the State Department will have charge of
ducting all negotiations with foreign countries, while
CAB will continue to select the operators as per
scribed law. The second was the launching of a
es of informal preliminary talks with major powers
set the stage for a formal world conference which
hardly be held until next year.

The goal we should seek is the unencumbered but
structive and economical development of interna-
al air transportation in the public interest. If the
war airplane is merely to be an instrumentality for
serving of national prestige or government cliques,
will not be fulfilling its destiny as a convenient, flex-
, inexpensive and speedy method of transportation
the peoples of the world.

General Critchley's Generosity

BRIGADIER GENERAL A. C. CRITCHLEY, direc-
tor-general of British Overseas Airways Corpora-
, introduced greyhound racing to England and there
ms to be no doubt that his enterprise and initiative has served him well financially, but recently he voiced a contribution to the arts and sciences of international aviation that might well cause some lifting of eyebrows.

In a press conference in London, the General made the following statement as quoted by the newspapers: "It shouldn't be possible for an American line to pick up a passenger in England and transport him to Amsterdam any more than it should be possible for a British operator to pick up a passenger in New York and set him down in St. Louis. Controls will certainly have to be applied."

This little bit of philosophy took us off our pins for a moment, but after catching our breath we managed to recall that London is still the capital of the United Kingdom and Amsterdam is still the capital of The Netherlands and that the two countries are each sovereign unto themselves.

There seems to be a quaint idea in Europe that in air transportation all of Europe is considered as a whole, and hence air traffic between any two points in Europe constitutes a cabotage. This conception is markedly true when the question of American airline operators comes to the fore. But in other matters, whether it be lend-lease or customs, each nation suddenly becomes a sovereignty.

At last count, New York and St. Louis were still in the same country, much as New Yorkers hate to admit that anything at all exists west of the Hudson River. But London and Amsterdam are separate and distinct capitals of separate and distinct nations. It is very doubtful indeed if any American operator has any plans to carry traffic between any two cities in France, or in England, or within any other country in Europe. If any American operator were to do so, the way would certainly be open for a European operator to carry passengers between any two points in the United States. But traffic between London and Amsterdam is certainly not cabotage in any reasonable sense. Is this an indication of how Europe is going to look toward U. S. participation in international air traffic? Is this the answer of Europe to our supplying the Allied nations with transport planes, even to the deterioriation and starvation of our own air transport industry?

Pick Up the Ball

VERY OFTEN the Civil Aeronautics Board has been accused of avoiding hot issues. But within the past few weeks it was passed a hot one that it may not be able to sidestep easily. The application of American Airlines for purchase of 51.4 per cent of the stock of American Export Airlines brings the Board face to face with an important issue.

The application brings into the open the entire question of whether a domestic airline can operate across the Atlantic. True, American Export's certificates are temporary, but on the basis of its exceptionally good operating record during the war it would seem reasonable to assume that the certificates would be made permanent in due course.

Here is not a new route application. Here is the kernel of U. S. foreign air policy. The Board has

adequate existing law on which to base a decision one way or another. If it delays, it will keep in the dark that much longer the whole problem of our postwar air policy. The issue seems to us to be quite clear-cut. It is a challenge to the Board to act and speak up on a vital question.

A Job Well Done

WAR TRAINING SERVICE will soon pass out of existence and thus will end a chapter of U. S. pilot training that began some years ago as the Civilian Pilot Training Program.

Much as one might criticize the Army for the manner in which the closing orders have come piece by piece—often weeks after a decision had obviously been made at the top—the fact remains that pilot training cannot continue indefinitely. It is one war job has been performed, and for the most part the job been performed quite well.

This may or may not mean the end of governm sponsored pilot training. With postwar economies an inevitable aftermath of gigantic public spending cannot be very hopeful that the Congress will tinue to appropriate public funds for training civilians to fly.

But the Civil Aeronautics Administration can much to aid the schools that now find themselves out contracts. It can do much to lay the groundw for postwar civil flying. The needless friction, rival and bickering that has characterized the CAA WTS activities should now be turned into a wh hearted and united effort to help civil aviation.

WAYNE W. PARRIS

Letters

RCAF Station
Prince Rupert, B. C., Canada
March 23, 1944

To the Editor:

In your March 15 issue, on page 35, I read with interest the following paragraph:

"The post office (Canadian) looks rather wistfully across the line to the United States, where it is understood that air mail has always been the backbone of air transport. Here, air mail gets into a passenger plane as and when it can."

Is this not contrary to some previous editorials of yours advocating a policy similar to Canada's wherein mail had the highest priority with regard to air transportation?

Perhaps Austin F. Cross is wrong, no?

RONALD G. BELL P/V

Editor's Note: Our Canadian correspondent, Newspaperman Austin Cross, was wrong in saying that air mail gets into a passenger plane "as and when it can," but his main thought that the U. S. Post Office Department has done more to initiate air service and provide the sponsorship for airlines, is correct. Group Commander Homer Smith, Canada's able and alert air attache in Washington, confirms the fact that air mail has absolute priority over passengers. Recently a westbound Trans-Canada Air Line plane removed 10 passengers to make room for an unusually heavy mail load. In Canada air mail goes ahead of any passenger.

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March 31, 1944

To the Editor:

Several years ago, we all believed that any aircraft would be in a fifteen-degree bank while making a standard-rate turn of 360° in two minutes. We had been taught that the faster craft would fly around a circle of greater diameter than the slower one would.

When we began to cruise above 200 miles an hour, two or three years ago, we noticed averaging approximately twenty-five degrees of bank while making standard-rate turns. After individual crystal balls failed to explain it, some of us boldly introduced the problem to fellow pilots at the risk of being thought very stupid—but, since nobody could dope out a good explanation for the increased bank at higher speeds, the feeling of stupidity was shared by one and all.

After a year or two of this Information-Please act among pilots, navigators, flight engineers, etc., I dug into my physics texts and found formulae giving the relationship between the several factors involved—but I'd been out of school too long to be able to make them jell, so I wrote to the college professor who wrote the book, and HE quickly and neatly brought order out of chaos, sent me two pages of formulae development in logical fashion, and gave a final quickie which will enable any of us to calculate the exact degree of bank which will accompany a standard-rate turn at any air-speed. Here it is:

$$\text{The tangent of the banking angle} = \frac{\frac{3.1416}{60} \times \text{velocity in feet per second}}{\text{acceleration of gravity}}$$

$$\text{or, tan angle} = \frac{\frac{3.1416}{60} \times \text{feet/second}}{32}$$

or, tan angle = .00163 x feet/second.

A couple of sample problems indicate that a bank of 13.5° accompanies a standard-rate turn at a true air-speed of one hundred miles an hour, while a bank of 25.5° accompanies a standard-rate turn at a true air-speed of two hundred miles an hour.

If you publish this data, you'll receive emphatic complaints that it doesn't work out this way in flight. This results from impossibility of manufacturing turn indicators which are uniformly exact. I've been testing fast military craft since the war started, and we're happy if, instead of the standard 360° in two minutes (3° per second), they'll turn at any rate between 2.4° and 3.6° per second. Also, the marks on artificial-horizon are thirty degrees apart and it's difficult, in flight, to estimate degree of bank accurately between these marks.

Yours for a college prof at every hangar-flying session.

FRANK E. WILLIAMS
433 So. Harvard Blvd.
Los Angeles 5, Calif.

•

March 22, 1944.

To the Editor:

What Mr. L. O. Head, President of Railway Express Agency, very astutely avoided mentioning in his article (*American Aviation*, March 15) was the question that shippers and just plain people have been asking for many years: "Why don't they bring Air Express rates down where I can afford to use it?"

Perhaps it is digging up old bones to mention it here, but wouldn't it seem that the airlines were pretty shortsighted to have failed to recognize the tremendous impetus lower prices would have given air cargo volume—years ago? Had they reduced their rates to a level consistent with the service rendered, there would have still remained a handsome profit and the airlines might have entered the war period with many cargo planes and much valuable cargo experience. Instead, the public has paid out countless millions of dollars tuition fees while the airlines and the air forces have learned about air cargo together—the hard way.

The public has always admitted that Air Express was a good transport medium, and worth a premium, too—but at 80c a ton and with that $1.00 minimum to shut out little fellow they simply haven't bitten. should they? Why pay $4.80 to ship pounds from coast to coast in two days everything works right) when it can mo seven days by rail for only 75c? Ninety cent, and perhaps more, of peacetime use Air Express did so because they *had* to it, for one reason or another—not because wanted too. That is not a sound basis which to build a volume business. Ship today is stimulated by wartime haste a disregard for cost, but commercial air c traffic is still very small.

It could be, just possibly, that the Rail Express people themselves weren't overly terested in seeing the rate subject raise ugly head. Why should Goliath, having working for him where he could keep an on everything he did, tell the little man w the stones were piled and suggest that he out and start throwing them around? So body might get hit in the eye.

Mr. Head notes in his article that "(his customers) insist that mass production is the basis for the lowest possible selling to the consumer." Definitely a truism ambiguously stated. Mass production at edged prices seldom remains mass produc for long, unless it is a monopoly. Anyway, would call 28,000 tons per annum a movement, after 17 years of effort? In a cou that measures annual goods movement in billions of tons? The successful indu first determines its market, then pitches price level where the public can buy and industry can make a reasonable profit. have the airlines been waiting for? Were they sold on their own product?

Now, as Jimmy Durante says, "everyb wants to get into the act." Five hundr more or less, applications are before the aut ities for a piece of this "new business." 16 domestic airlines, many of whom two years ago regarded express as nec lucrative ballast to be carried after the and passengers were taken care of, are following the parade instead of leading The 28,000 tons of Air Express carried 1943 could well have been 280,000 tons even 2,800,000 tons, if they had pulled heads out of the sands of mail subsidy passenger competition long enough to rea they had a gold mine in their hands might some day be a-swarm with cl jumpers. As indeed it is, today.

Naturally, Air Express rates couldn't be duced *now*. Nobody *ever* reduces anyth voluntarily in time of war! Besides, it wo only bring in more business the airl couldn't handle, so why not wait until competition actually begins so we can have nice rate war and freeze 'em out?

Good luck to Mr. Hea and his mutual admiration society. ...ould seem, however that the party is about over and the 17 y locusts are about to land.

C. K. M.

PLANE MAINTENANCE. By John E ...nger, Allan F. Bonnalie and Nairne F. ...rd. McGraw-Hill Book Co., New York. ...pp. $3.00.

...re is a new second edition of a book pre-...d for the following purposes: (1) the ...ing of mechanics for repair stations of ...es. (2) to serve as a reference book for ...r station operators, and (3) to be a text ...reference for the use of the mechanics of ...armed forces. The authors are well versed ...their subject: Younger is a consulting aero-...nal engineer and professor and chairman ...echanical engineering at the University of ...gland; Comdr. Bonnalie, USNR, is on leave ...United Air Lines, where he was assistant ...utive vice president-operations, and Ward ...nsulting welding engineer, Beech Aircraft ...The text is well illustrated, and the book ...uld serve well the purposes for which it was ...ared.

•

...K AND RUDDER. By Wolfgang Lange-...ache. Whittlesey House, New York. 348 ... $3.75.

...is book, the publishers state, "is the first ...t analysis of the art of flying ever at-...pted. It represents four years of research, ...g and writing; and it shows exactly what ...pilot does when he flies, just how he does ...and why." Throughout, the book is re-...kably clear and well written, and the author ...s a good job of explaining, in simple lan-...e, the whys and wherefores of flying. His ...lanations are greatly aided by the many ...strations. Included in the book is a chapter ..."The Dangers of the Air," by Leighton ...ist, publisher of *Air Facts*.

...is is not Langewiesche's first book. He ...ll be remembered as the author of "I'll Take ...High Road" and "Lightplane Flying," both ...which were well received. He is now a ...pilot for Cessna Aircraft Co.

•

...S EXCITING AIR, THE EXPERIENCES OF ...TEST PILOT. By Boone T. Guyton. 219 ... McGraw-Hill Book Co., New York. $2.00.

...working test pilot relates some of his most ...owing experiences and the experiences of ...fellow test pilots. Guyton, who works for ...the Vought Aircraft Division, United Air-...ft Corp., makes no attempt to glamourize ..."serious business" of test flying, but he ...ves no doubt in the reader's mind that the ...ation is high adventure. The test pilot sees ...ath only briefly before it is on top of ...m, he says. He cites the case of one "Jug" ...ot, whose plane began to shed parts in a ...ge recently.

..."Hell, I knew I was in a pack of trouble," ...Lt. Kelley. "You know you can't bail out at ...speed like that, and it is stinking just to sit ...there and wait. I guess I just did what I could ...with what I had left. I found myself holding ...the sticky stick back in my stomach, watching ...the long arc of my pull-out, wondering if we ...could have enough sky. Well—we did!"

•

...TIONARY OF AERONAUTICS (in five ...languages). Compiled by Lothar Ahrens. ...Frederick Ungar Publishing Co., New York. ...pp. Price not listed.

...This handy book was copyrighted in Berlin ...1939 and is published and distributed in the ...public interest by authority of the Alien Prop-...erty Custodian. It contains English, French, ...German, Italian and Spanish translations of ...the words relating to aviation. Among other ...things, the dictionary is intended to assist tech-...nical translations, and at the same time is en-...dorsed by the publishers as an assistance to ...the interpreter. It should prove valuable to ...many persons in aviation.

•

...ES ON THE AIR. By C. M. Roan. 60 pp. ...illustrated. Bernard Ackerman, Inc., New ...York. $1.00.

...The author takes you on an imaginary cross-...country flight in a commercial transport plane. ...He tells you what happens when people get ...angry or sleepy in flight, what the earth looks ...like from 10,000 feet up in the sky, and how ...pilots can find their way in the dark. A fine ...book for children.

Books

ENGINEERS' DICTIONARY (Spanish-English and English-Spanish). By Louis A. Robb. 423 pp. John Wiley & Sons, Inc., New York. $6.00.

This volume is the result of 25 years' accumulation of material by an engineering firm working in Latin America. The firm, with which Author Robb is associated, needed Spanish equivalents for all the familiar North American terms of engineering and construction. It collected more than 20 Spanish and English-Spanish technical dictionaries without finding what it needed. Practically all of the dictionaries were of European origin and their Spanish terms were those of Spain and their English terms those of Great Britain. Robb undertook to compile for office use a list of English and Spanish equivalents in the vocabulary of the engineers of North, South, and Central America. This invaluable work is the finished compilation.

•

NAVY IN THE SKY. By Lieut. Wallace W. Elton, USNR. (Illustrated with official U. S. Navy and Marine Corps photographs.) Whittlesey House, New York. 104 pp. $2.00.

This book, although written and designed by a Naval officer-instructor to serve as a teaching aid in the indoctrination of naval officers, is available to civilians as well. It is, as Lieut. Elton says, "a commentary on the men and machines of a Navy that fights in the sky. It is largely a pictorial commentary; the written word is explanatory only."

In addition to an historical note on naval aviation and a list of naval aircraft nomenclature, the contents include a review of landplanes, seaplanes, flying boats, blimps, aircraft carriers, armament, Naval Air Transport Service, WAVES, and the U. S. Marines' aviation.

•

JOE FOSS, FLYNG MARINE, as told to Walter Simmons. E. P. Dutton & Co., Inc., New York. 160 pp. $2.50.

This is the story of the fighter pilot who, at this writing, is the greatest American ace of World War II, with 26 Jap planes to his credit—tying Capt. Rickenbacker's World War I record. It is the story of a typical American boy, of Sioux Falls, S. D., who joined the Marines because he was eager for a fight. It is told by a middle-western newspaperman, who knew Foss as a school boy in Sioux Falls and who has followed his career ever since. Thus, it is filled with many anecdotes observed first-hand by the author.

•

AIRCRAFT INSTRUMENTS (Second Edition). By George Ellis Irvin (deceased). McGraw-Hill Book Co., New York. 607 pp. $5.00.

The author of this volume passed away before his work was completed. Additions and revisions to the new edition were undertaken by the staff of the New York School of Aircraft Instruments, under the direction of J. Richard Whitman, supervisor of training. The staff did a remarkably thorough job under the circumstances, being aided by many valuable suggestions that had come in from interested students of the subject. The book includes achievements in the field of aircraft instruments since the United States became an active participant in World War II.

•

MANUAL OF AIRCRAFT RIVETING. By Marvin G. Roth. McGraw-Hill Book Co., New York. 90 pp. $1.25.

This pocket-size handbook of aviation riveting deals with modern tools, devices and methods used in aircraft construction and repairs. The author is now a captain in the Air Service Command. Discussed are types of rivets, riveted joints, heat treatment and prevention of corrosion of rivets, types of riveting, flash riveting, blind riveting, removal of rivets, installation of Dzus springs, drill grinding, and shop hints on riveting.

AIRCRAFT PRODUCTION ILLUSTRATION. By George Tharratt. 200 pp. Illustrated by drawings. McGraw-Hill Book Co., New York. $3.50.

Professor Tharratt, a member of the faculty of California Institute of Technology and chief engineer of Adel Precision Products Corp., is the recognized originator of production illustration. He presents in this new textbook and reference manual much valuable material on perspective layout, technical sketching, and the basic principles of production illustration. He gives an account of the history of production illustration, and offers suggestions for the introduction of his methods into existing engineering and manufacturing organizations.

•

THE NAVY HAS WINGS. By Fletcher Pratt. (Foreword by Rear Admiral John S. McCain, Chief of Bureau of Aeronautics.). Harper & Brothers, New York. 224 pages, 32 pages of photographs; $2.75.

An overall portrayal of Naval Aviation from training school to battle, with special emphasis on the men who make up the Naval air arm. Pratt analyses the role of aviation in conjunction with the fleet and the prominent position it plays in determining naval strategy. Not only Navy fighters and bombers, but aircraft carriers, blimps and land bases figure in the discussion of the tactics of Naval Aviation.

•

BASIC AIR NAVIGATION. By Elbert F. Blackburn. McGraw-Hill Book Co., New York. 296 pp. $4.00.

E. F. Blackburn, chief navigation instructor of Pan American Airways' Atlantic Division, has prepared this text for navigators and pilots. It is designed to assure adequate basic training with little or no coaching and but average mathematical ability on the part of the reader. The book presents a simple yet comprehensive analysis of the air navigator's problems from the time the flight is first planned until the destination is reached.

Obituaries

Inglis M. Uppercu

Inglis Moore Uppercu, former airplane manufacturer and airline operator, who is best remembered as the president of the old Uppercu Cadillac Corp., long the sales outlet in the New York metropolitan area for Cadillac and La Salle automobiles, died last week at the age of 66. In 1914-17 he operated a passenger airline touching at Miami, Nassau, Cuba, and Key West. He was formerly president of several companies which manufactured airplanes at Keyport, N. J. One of them, the Aeromarine Plane and Motor Co., made seaplanes for the government in World War I and formerly operated a New York-Atlantic City airline. Another, the Aeromarine Klemm Corp., made small private planes based on a German design. He also formed the Uppercu Bernelli Aircraft Corp. For his pioneer efforts in the airplane industry, Uppercu received a rarely awarded certificate from the Early Birds.

Ralph L. Zimmerman

Lt. Col. Ralph L. Zimmerman, former United Air Lines pilot on the Pacific Coast, was killed recently in the crash of an Army transport plane near Oakland, Calif. Col. Zimmerman left United in 1939 to enlist in the AAF, and had seen service in Panama, Greenland, England, and Africa with the Troop Carrier Command.

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THIS scientific apparatus looks quite earth-bound.

But, for experimental purposes at least, it can take a man higher than any aircraft ever built.

It is Sperry's new High Altitude Laboratory, constructed through the cooperation and assistance of our Government, and dedicated to the service of our Country in memory of Frederic Blin Vose, a Sperry engineer who lost his life in the performance of his duties in the war effort.

This laboratory helps find the answers to questions like these:

How does man react in the stratosphere when the sub-zero cold bites through his heated flying suit? Will an instrument that works perfectly at 2000 feet, "conk out" at 40,000 feet?

The laboratory can mechanically simulate atmospheric pressures equivalent to those met at altitudes over 45,000 feet. It duplicates temperatures as low as 87 degrees below zero Fahrenheit.

This permits the testing of flight instruments and the reactions of men who use them under atmospheric and temperature conditions virtually identical with those met 8 miles up.

Testing the *combination* of man and instrument in this laboratory will result in better protection for the lives of our military and naval flyers, and make possible improved instrument design and more efficient operation.

Experienced engineers and a medical staff, trained in the technique of the physiology of high-altitude flying developed by the Mayo Clinic and the Medical Departments of the Armed Forces, direct the Sperry laboratory. This laboratory serves other war manufacturers as well as our Armed Forces.

It is Sperry's hope that the tests and studies of man and his instruments in this laboratory will make possible the development of the perfect man-instrument team that will function in complete harmony in the frigid blue of the stratosphere.

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ARMY E NAVY

Vol. 7 No. 22
April 15, 1944

American Aviation

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This Issue

ir Talks Pave Way for World Conference

reliminary Matters Discussed With Canada and Britain, No Commitments Made

RELIMINARY air talks were held by U. S. representatives within the the past two weeks with Canada and Great Britain presaging a formal world conference at a later date, probably during 1945.

eading some sort of statement of policy irection from the U. S. Senate, governt officials were in no position to com- the U. S. to any sort of agreement and , in fact, not in a position to speak U. S. foreign air policy. But many liminary matters were discussed and me laid for subsequent discussions.

Ottawa and London went Adolf A. Assistant Secretary of State, and ard P. Warner, Vice Chairman of the Aeronautics Board.

Washington, three officials were sche- d to hold talks with Russian emis- s. Former Ambassador Joseph Grew, has been appointed to head up U. S. discussions; L. Welch Pogue, Chairman the Civil Aeronautics Board; and W. M. Burden, Assistant Secretary of Com- rce, were planning to confer with the ssians.

London Mr. Berle and Lord Beaver- ok, Lord Privy Seal, issued a joint ement after four days of talks to the t that the two governments "had ed that international control should ver a considerable field of technical ters." Pending first-hand reports on Berle's return, this statement would dicate that the U. S. had informed Great Britain that it would not agree to participate in any international authority which would endeavor to control economic matters.

Other parts of the statement were:

"The representatives have consulted together in preparation for an international conference on civil aviation. They made arrangements for continuing technical conversations for the purpose of reaching a detailed agreement on several aspects of this field.

"They (the delegates) have in mind that the government of the Soviet Union and other governments would likewise enter into conversations prior to such an international conference."

It is considered likely that U. S. officials will have talks with representatives of other countries, especially China, prior to any large formal conference.

The present discussions, it has been emphasized, are exploratory in nature. Chief purpose is to find out what other governments have in mind and to discover as many common meeting grounds as possible. Mr. Berle was to report to the Senate sub-committee now studying postwar air transport problems as soon as he returned from London.

AA Tests Army Transport Planes for Postwar Use

The Civil Aeronautics Administration s put two Army Air Forces cargo-trans- rt model airplanes through Civil Air gulation tests to determine whether ey will be able to go immediately into mmercial transport service after the war. nal results of the tests have not yet en compiled.

dications are that more Army planes ll be turned over to CAA for tests as n as that agency can handle them. In s way it is believed that CAA will be a position to inform the manufacturers the respective planes what changes, if y, will be necessary before the planes n be operated commercially. In addi- n, the airlines will know which planes ey can purchase for immediate use.

The two ships so far tested are models at have never been in scheduled com- rcial operation.

Canada Picks DC-4 As Postwar Transport

SHORTLY after he had made his airline policy announcement, and while it was still under heavy attack, Canadian Minister of Munitions and Supply C. D. Howe stirred up a new legislative controversy with a surprise statement to the House of Commons at Ottawa, concerning the Canadian Government's selection of postwar airplanes.

Most controversial feature of his address was his identification of the Douglas DC-4 as the four-engined plane chosen for Canada's postwar domestic transport and his description of the DC-4 as "the plane most likely to succeed in the next five years."

Manufacturing rights for the DC-4 had been obtained with the approval of the Army, Navy and State Department; an initial order approximating $15,000,000 in dollar value had been placed; and manufacturing had actually begun at the government-owned plant operated by Canadian Vickers at Montreal, it was disclosed.

Repercussions were immediate. Commons members previously led to believe that the York or some other Canadian or British designed transport would be chosen, called the DC-4 "obsolete." It was contended that the Government would waste "a lot of money" by utilizing the DC-4 for civilian air service. The same money could be used to develop a Canadian designed plane that would establish Canadian leadership in its own transportation.

Another issue was raised concerning the possibility that the Douglas might also be manufactured at the Victory Aircraft, Ltd., plant at Malton, Ontario, displacing the Lancaster in quantity production there. Premier Drew charged that the contract was switched from the Malton plant to the plant operated by Canadian Vickers because H. J. Symington, president of Trans-Canada Air Lines, which will be the chief user of the DC-4, is also an officer of the Royal Securities Corp., a Montreal investment firm heavily interested in the financing of Canadian Vickers, Ltd.

In addition, legislators from various industrial centers contended that the order placed with Vickers and other parts of the program featuring planes made in Montreal, would give that city a disproportionate share of the postwar aircraft manufacturing industry.

It has since been revealed that the Canadian authorities have agreed that no DC-4's are to be put into commercial operation in Canada until the same plane is available to purchasers in the United States. However, Canada will also have sales rights of the plane to England.

In explaining the action of the Government, Mr. Howe said: "A few months ago, it was decided that we must undertake the manufacture of a transport aircraft for use by Trans-Canada Air Lines in services operated on this continent. It was decided, after very thorough investigation, that the type of aircraft most suitable for such service was the DC-4.

"In selecting the plant in which the DC-4 would be manufactured, we had to be very certain that the production did not interfere with urgent war programs. We selected the government-owned plant in Montreal, because the program on which that plant is now engaged will terminate late this year. The government-owned plant at Malton is just coming into volume production on a very large order for Lan-

caster bombers. The Lancaster bomber is the airplane that now has the highest priority in Canadian production. So far as we can now estimate, the dollar value of production at the Malton plant will be in the neighborhood of $200,000,000."

Discussing the other planes proposed for postwar aviation in Canada, Mr. Howe stated that the Norseman had been selected for cargo transportation. It has been in production for two years, "is still the best of its type, and will certainly continue to be produced to meet postwar requirements." The Norseman is made by Noorduyn Aviation, Ltd., of Montreal.

'Norseman' Used for Cargo

The Norseman (UC-64A) is in use by the U. S. Army Air Forces as a utility cargo plane. Large orders were placed with Noorduyn and with Aeronca Aircraft Corp., Middletown, O., which holds the manufacturing rights in the United States. As built by Aeronca, the freighter has a wing span of 51½ feet, 550 hp engines, ceiling of 18,000 feet and a maximum speed of 160 miles per hour. It has a gross weight, including cargo, of 7,400 pounds, and a landing speed of 68 miles per hour.

The Norseman for some time has been considered the only aircraft of original Canadian design in production.

"Two intermediate types of planes are desired between these two," Mr. Howe added, "a small transport plane and a medium transport plane. Several designs are being studied, and out of them will come types which should have substantial use in this country, and which can be put into production quickly."

Reports from Canadian industry sources indicate that Fairchild and Fleet may be the recipients of contracts for these planes.

"We are also interested in a transatlantic type of plane," Mr. Howe then said. "The design for that is well advanced, and it is probable that that may be added to the types of planes which will be produced postwar." No official or authoritative identification of this plane has been made, but aviation circles consider it probable that the Munitions Minister was referring to the York, civilian counterpart of the Lancaster, which is known to have been undergoing transatlantic test flights by the Government. The only comment that Mr. Howe would make was that the proposed carrier was of combination Canadian and British design.

'Not Tied Down to One Type'

Stating that so far as aircraft engines are concerned, Canada is in a most fortunate position, not being tied down to the use of any one type, Mr. Howe claimed that Canadian manufacturers thus have the choice of the production of both the United States and Great Britain.

"Up to this time, we have never had an airframe awaiting an engine," he declared. "We have always been able to obtain the engines we have required during a very tight period of supply. We are now coming to a period where engine production will be well ahead of requirements, and, not being tied to any particular engine of Canadian manufacture, we can go out and buy any engine in the world, and buy it on favorable terms."

For this reason, he said, the necessity of using one particular engine is not a problem to Canadian designers. This is fortunate, because airplane engines are subject to frequent changes and large expenditures must be devoted to development work. In addition, it is quite likely that airplane engines as known today are becoming obsolescent, he added. Although that is not a certainty, "there is a suspicion that that is so."

For the past two years Canada has been actively associated with the development of the jet propulsion engine, he advised the Commons. A strong team has been in England working with the designers of the engine and part of the development work has been moved to Canada. This was for the particular purpose of conducting cold-weather experiments on the various types of jet-propulsion engines as they are produced, in order to determine the relative merits of each type under extreme weather conditions.

Starting from scratch in the development of jet-propulsion engines, Canada will be found capable of starting on even terms with other countries, he concluded. "Since no one will have any particular advantage in the building of jet propulsion engines I think we should be warranted in undertaking engine-building with some prospect of success."

Feeder Pick-Up Association Formed

American Aviation P

Two views of the conference in Washington, D. C., April 3 at which the Feeder Airlines Association was formed. Top photo, left to right—Ralph S. Young, Automatic Air Mail, Inc.; Col. Harold S. Hartney, Aero Pick-up Service Co.; H. K. Gilbert, Jr., State Airlines; Don V. Seevers, All American Aviation, Inc.; and Harry R. Stringer, vice president, All American Aviation, who served as acting chairman. Below, left to right—Joseph J. Mitchener, Hawthorne Airways; Henry Knight, Beech Aircraft; Cody Laird, Southeastern Air Express, Inc.; C. C. Trenor, Southair, Inc.; Alden B. Woodbury, Parks Air College, Inc.; and W. R. Kent, Southair, Inc.

The group adopted the following set of objects and purposes:

"(1) The establishment of a comprehensive network of feeder airlines as an integral part of the nation's air transportation system to extend to the maximum number of our citizens the advantages and benefits of direct scheduled air service for mail, passengers and cargo; (2) To serve and advise with all Federal, State and municipal agencies charged with the responsibility of the development and regulation of air transportation; (3) To advocate laws and official regulations which, consistent with the best interests of the public, will facilitate this program; (4) To promote air mail, air cargo and air travel; (5) To promote public support of this program; (6) To promote civil aviation and the advancement of aeronautical science in the public interest and that of national defense; (7) To cooperate with all recognized organizations engaged in the promotion of aviation; (8) To cooperate and advise with local public officials in the construction and improvement of airports; (9) To provide a clearing house for all information of mutual interest to members; (10) To promote healthy competition and to prevent monopoly in air transportation."

Acting Chairman Stringer appointed the following steering committee for setting up a permanent FALA organization; H. K. Gilbert, Jr., State Airlines; Joseph J. Mitchener, Hawthorne Airways; Cody Laird, Southeastern Air Express, Inc., Alden B. Woodbury, Parks Air College, Inc., and W. R. Kent, Southair, Inc. Stringer was named to the committee by unanimous vote.

AAF Stops Training By Civilian Schools

1 Colleges and 2 WTS Flight enters Dropped

THE Army Air Forces on April 1 announced that in the future would have virtually no need "the splendid work" of civilian schools. After mid-summer military aviation cadets will be ed at Army facilities although t 40 civilian-operated primary ols will be continued in the gram.

e announced reason for closing the lleges and 82 flight centers in War ing Service's air crew program was turn of 36,000 cadets to their former ns in the ground forces to meet de- ies in Selective Service. Withdrawal se men and the termination of re- ment of aviation cadets leaves in- nt personnel to sustain the WTS am, the Army explained.

e shutdown of 11 more Primary ols presumably follows of necessity curtailment of the Army's quotas of tion cadets. A schedule has been ured for the termination of training ese schools between June 27 and ust 4.

AAF Personnel Not Affected

The action affects only air crew stu- s and does not alter the status of personnel undergoing other types of ge training," the Army asserted. Plans now being made to train all 17-year- AAF Enlisted Reservists within the alized Training Reserve Program at ges which are now in either the P or AAF College Training Program.

e 40,000 Air Corps Enlisted Reservists TS will be withdrawn on a monthly a basis between now and June 30 for gnment to "on-the-job air crew train- at AAF Training Command fields e awaiting pre-flight training." Stu- s at the 11 Primary schools will con- e their normal courses before being ped to the next phase.

h a letter addressed to War Training ice announcing the termination of the ining air crew schools, Major Gen. W. Harper, Ass't Chief of Air Staff, ining, said, "I would like to take this portunity to express my personal ap- iation for the splendid work that you your organization as well as the ian institutions have contributed to successful conduct of this program. ing but the highest commendation e expressed for the patriotic work these civilian activities have provided ng the critical period of our training."

med with this praise, War Training ice faced a difficult three months. major problems before it are securing g jobs for the Enlisted Reservists in- tors and disposal of the fleet of air- t which have provided training for all y cadets and many instructors.

e first task seemed easier on April hen the Army announced a compre- hensive list of alternatives for the instructors' future and appeared to realize for the first time that these men constitute a valuable pool of trained flyers. A procedure was announced by which the instructors in both WTS and Primary schools may apply for a variety of flying jobs provided they can meet the professional and physical qualifications.

They may become: combat pilots; pilots in the Air Transport Command, Ferrying Division; glider pilots; navigators or bombardiers; radio operators; aerial gunners; or other combat crew members. If they cannot or do not wish to qualify for any of these they may request discharge or call to active duty for "suitable ground training in the AAF." AAF and WTS officials praised the instructors for the "excellent job they have done which is sincerely appreciated" and assured them that they would be given "every opportunity" to obtain another flying job when their instruction is no longer needed.

Meanwhile regional officials of CAA and Defense Plant Corporation were meeting in Washington last week to attempt a streamlining of the other major problem: disposal of surplus planes. The substantial number of additional planes which will be released by the shutdown of Navy and Air Corps Enlisted Reservists programs demands a less cumbersome procedure than that used to sell planes from the instructor schools. Present methods require certification of all aircraft by the Washington office before they may be put up for sale.

The streamlining is expected to take the form of complete decentralization, with the regional offices of CAA and DPC working together. By this method all control over individual sales and all necessary certification can be made by the field office closest to the present location of each plane. Primary schools anticipate no similar disposal problem since all planes used in their program are owned by the AAF and since the facilities and fields are expected to be maintained in a stand-by capacity for the remainder of the year.

However, Primary school operators are questioning the decision to curtail the training program at this time. Also, a number of Washington observers have expressed the fear that the Air Force has become the victim of a changed policy from the high command.

J. Wendell Coombs, president of the Aeronautical Training Society, the Primary schools organization, recently urged that although curtailment was to be expected at some time, "the Army Air Forces must not be forced to taper off too soon."

'Air General' Needed

With the big job of fighting still ahead, "it would be a grave hazard at this time for any overall planning to sell airpower short," he said. "We are disturbed lest certain factions of the supreme command might be doing this very thing. And we cannot help but wonder how much more effective air operations in any theatre might be if headed up by an air general."

Coombs has submitted a plan to the Army and Navy for additional uses of the civilian schools which would help solve the critical manpower problem, he revealed. The 11 Primary schools which are being eliminated include: Georgia Air Service, Inc., Jackson, Tenn., June 27; Southern Aviation School, Camden, S. C., Aug. 4; Helena Aero. Tech., Helena, Ark., Aug. 4; Greenville Aviation School, Ocala, Fla., Aug. 4; Georgia Aero Tech., Augusta, Ga. (Basic), Aug. 4; Brayton Flying Service, Cuero, Tex., Aug. 4; Spartan Aircraft Co., Tulsa, Okla., Aug. 4; Hunter Flying Service, Vernon, Tex., Aug. 4; Allan Hancock College of Aero., Santa Maria, Cal., June 27; Morton Air Academy, Blythe, Cal., Aug. 4; Polaris Flight Academy, Inc., Lancaster, Cal., June 27.

Aviation Calendar

April 15-17—"AVIADA" Aviation Week celebration, Las Vegas, Nev.

April 17-20—Fourth Annual Conference of Society of Aeronautical Weight Engineers, Brown Palace Hotel, Denver, Colo.

April 24—Joint meeting, East and West Coast Aircraft War Production Councils, Los Angeles.

April 27-28—National Light Aircraft Meeting, Detroit.

April 28-29—National Convention, Aviation Writers Association, Dayton, O.

April 28-30—Southwest Aircraft and Accessories Exposition, Mustang Airport, Dallas, Tex.

May 1-3—Third Wartime Aviation Planning Conference, A. & M. College of Texas, College Station, Tex.

May 8—Board meeting, National Aeronautic Association, Washington, D. C.

May 12—Maryland statewide aviation conference, Emerson Hotel, Baltimore.

July 10-12—American Association of Airport Executives, annual meeting, Sherman Hotel, Chicago.

Aug. 2-3—1944 National Business Meeting of National Aeronautic Association, Denver, Col.

Oct. 5-7—SAE National Aircraft Engineering and Production meeting and engineering display, Biltmore Hotel, Los Angeles, Cal.

Nov. 11-15—Second National Aviation Planning Clinic, Oklahoma City, Okla.

Dec. 4-6—SAE National Air Cargo Meeting, Hotel Knickerbocker, Chicago, Ill.

Jan. 8-12—1945 SAE Annual Meeting and Engineering Display, Book-Cadillac Hotel, Detroit, Mich.

Pogue to Speak in Las Vegas

L. Welch Pogue, chairman of the Civil Aeronautical Board, will be the principal speaker at the first annual "Aviada" celebration April 15, 16, and 17 in Las Vegas, Nev.

The program sponsored by the Junior Chamber of Commerce, commemorates the city's 18th anniversary of commercial air mail service. Pogue will speak on April 17, date of the first flight piloted by Fred Kelly of Western Air Lines in 1926.

Convair Reveals Fast Postwar Airline

Early Manufacture Is Aim in Engineering of New Model 39

THE POSTWAR airliner which will be Consolidated Vultee Aircraft Corporation's entry for long range transport operation was unveiled last week in mock-ups which went on exhibit in New York, and in sketches released for publication.

The prototype, now completed, will be flown from Convair's San Diego plant by the end of this month, company officials announced.

Designated as Model 39, the new airliner, Convair said, is "designed to replace the standard airliners of today on routes both within continental limits and spanning oceans. Convair's announcement said:

"The new ship will carry 48 passengers with baggage and 1,200 pounds of mail on flights up to 2,500 miles. As a sleeper plane, Model 39 will accommodate 24 passengers and a cargo version is expected to carry a payload of 12,000 pounds over similar distances.

"Normal cruising speed for the ship will be 240 mph contrasted with 180 mph for present day planes. Normal gross weight will be 56,000 pounds, although the ship is designed for provisional gross weights up to 64,000 pounds.

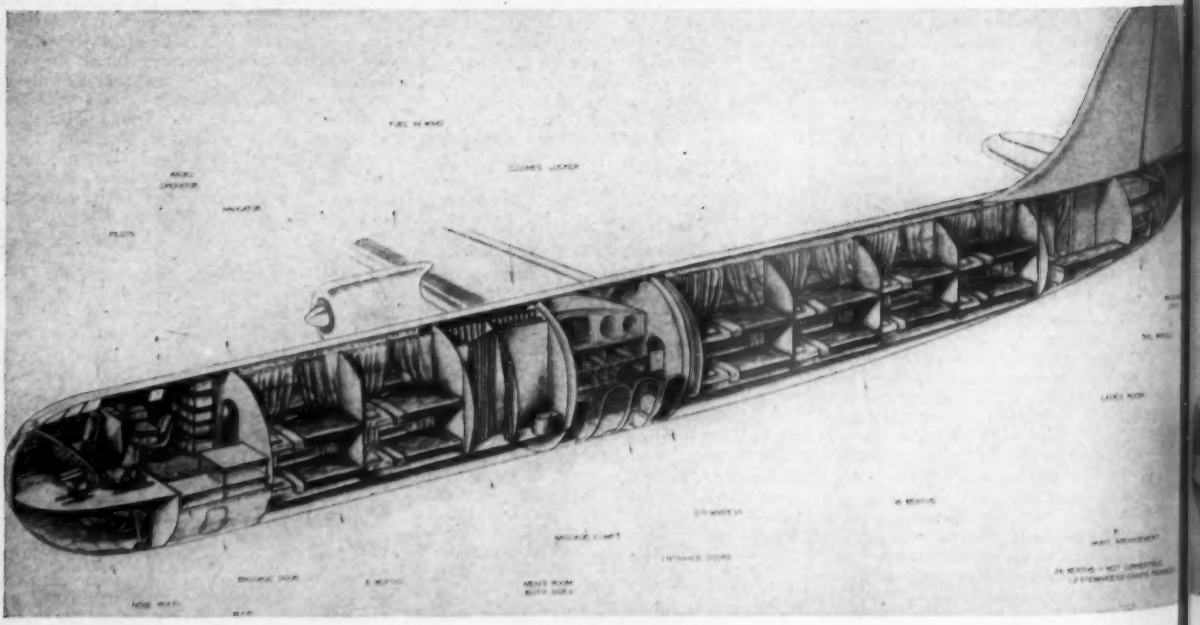
"One of the features is the interior arrangement designed by Henry Dreyfuss, industrial designer who developed Pullman roomette and the interiors of 20th Century Limited.

"One Dreyfuss model combines specially designed reclining seats with a ... canted arrangement of the seating ... Other designs provide for convertible ... and night arrangements with comfortable full-size upper and lower berths and seats of the reclining type facing forward.

Model 39 specifications include:

Engines, four 1100 hp Pratt & Whitney; wing span, 110 feet; fuselage length, ... feet; maximum fuselage diameter, 10 ... six inches; passenger capacity, 48-52 as sleeper); normal cruising speed, ... mph at 60% power; maximum range, ...

Aft compartment — reclining seat and reading light.



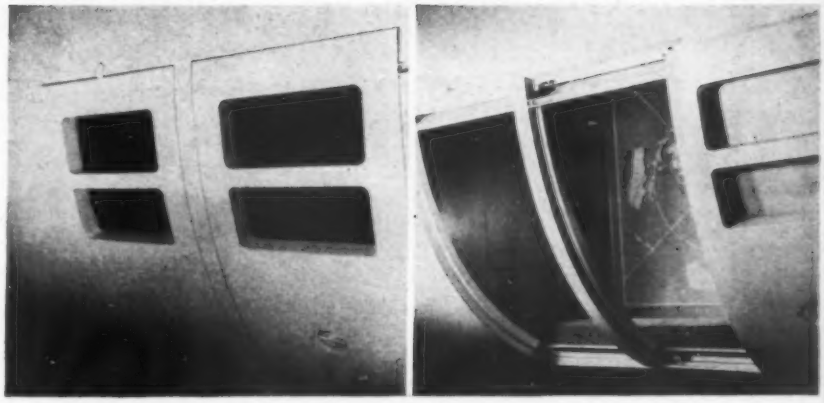
Night arrangement.

an 4,000 miles at 200 mph; stalling speed, mph.

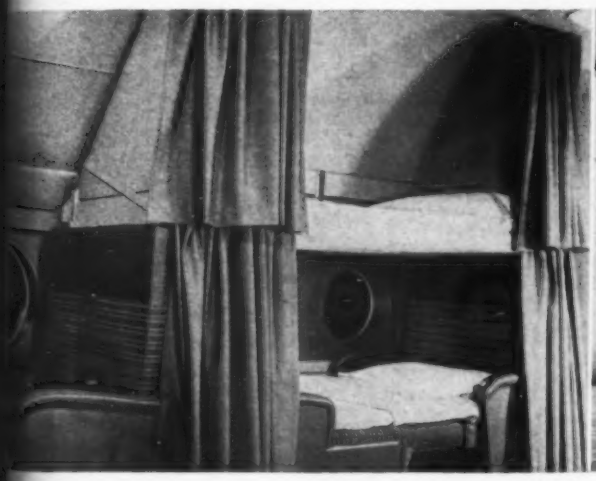
Convair officials said the ship will not e produced commercially until after the r since Consolidated Vultee's facilities e devoted 100% to war production. owever, experience being gained in pro- cing combat ships, together with the t that important components of the ship e already in mass production as parts of e Liberator, indicates that manufacture ill begin at an early date after the war. bstantial economies in manufacture ay be expected.

The high wing of the ship will provide obstructed visibility from all seats and usual facility in loading of passengers d cargo.

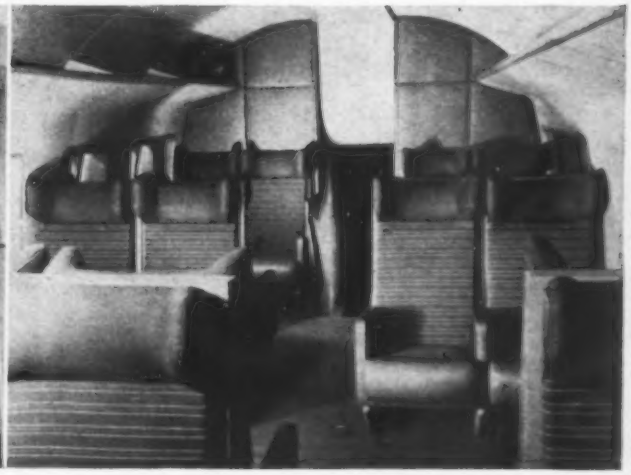
The Model 39 will fly with considerable gher wing loading than is standard for rrent commercial models.



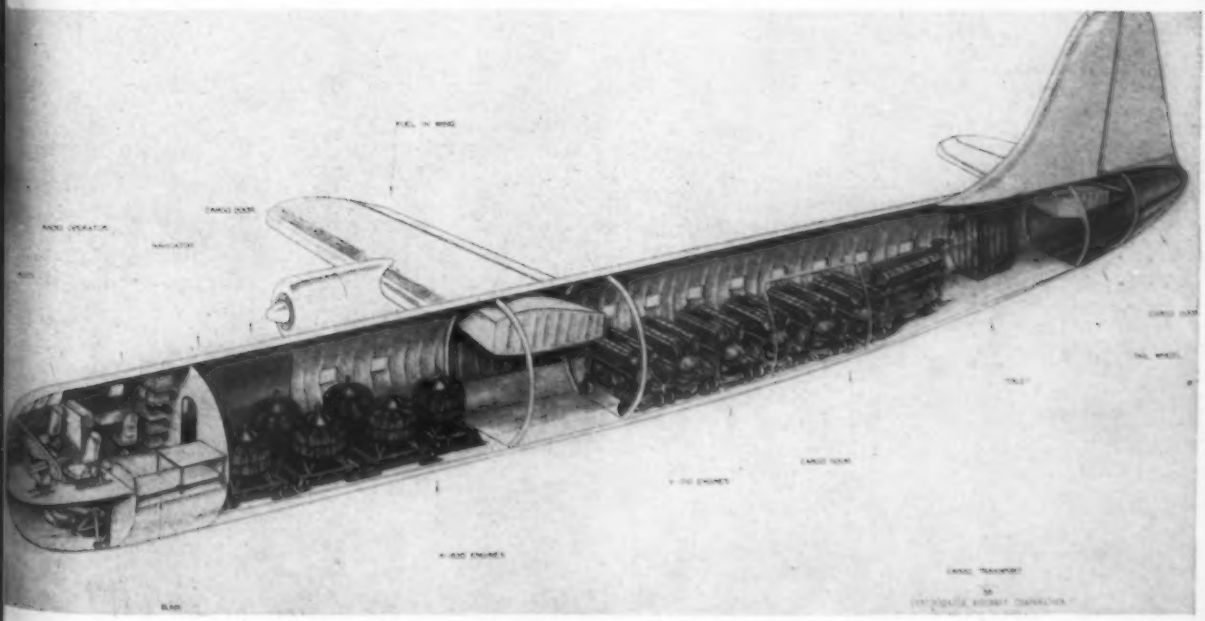
Entrance—with sliding doors closed and open.



Sleeper transport—berths made up.



Forward compartment—facing lobby.



Cargo transport.

List of Plants and Planes in Draft Deferment Class Issued

AIRCRAFT MANUFACTURERS last week received a comprehensive list of plants and airplanes which have been termed "critical and urgent" for the purpose of obtaining deferment for under-26-years workers. Although the 42-page list included most airframe plants and many sub-contractors, manufacturers recognized that without a liberal quota of deferments for the industry many of the "critical" programs might fall behind schedule.

Requests for deferment in the industry were endorsed by Army Air Force and Navy representatives in the field and forwarded to Washington. As *American Aviation* went to press, the special inter-agency committee was meeting with War Manpower Commission to assign each industry and plant its quota of deferments.

"Recommendations for deferment of registrants under 26 engaged in critical production or service will be limited to specific individuals engaged in work which requires extreme or specialized skill or knowledge or a high educational qualification, and then only when the individual is irreplaceable from other less urgent work within the plant or by recruitment," the inter-agency committee of Manpower Claimants has ruled. The committee is headed by War Manpower Commissioner McNutt.

General Category:

The general category of critical programs includes for the Army: aircraft tires and tubes including necessary tire cord, fabrics and molds; research and development work specifically assigned by the technical services; and airplanes Class 1 through 4 by plants and planes as listed. The Navy's list covers aircraft carriers, maintenance of aircraft for the fleet and airplanes Class 1 through 4 by planes and plants as listed. Although the approved list of planes and plants did not include all class 1 through 4 models nor all plants making the included models, the inclusion of a large number of sub-contractors met with approval of the industry.

With the program for determining deferment of the under-26 age group under way. Selective Service Director Hershey announced the next step—re-examination of deferments of all men under 30. But he added that Selective Service will apply somewhat less stringent requirements for those between 26 and 30. As the skill and age increases, the value to industry and agriculture increases. As the age increases, the value to the Army and Navy decreases."

Hershey outlined the program ahead for the next few months: "Selective Service will furnish to the Army and the Navy every man who can possibly be made available. It will complete the calls with men from the 26 to 29 and over 30 age groups. Selective Service will immediately reclassify into occupationally deferred classes all 4-F's and 1-A-L's (limited service) who will get into war jobs or into essential agriculture."

West Coast aircraft officials anticipate the drastic Selective Service policy toward continued deferments may mean a 90% loss in personnel under 26. They report that present uncertainty over draft status has already caused many people to join the service without waiting for a review and reclassification.

Of the 10,188 male engineers in the industry on the West Coast, 3,088 are between the ages of 18 and 25 with approximately 2,800 between 22 and 25. The industry now employs 2,767 women in engineering, using them as draftsmen, computers and in every position for which a woman qualifies by education and experience. The Aircraft War Production Council has pointed out that in aircraft there is no such thing as a "frozen design." "This means that engineering time spent on necessary changes and improvements in an established model equals and frequently exceeds by several times the expenditure on the original design."

In addition to the threatened heavy loss of engineering talent, many of the highly skilled production and assembly mechanics fall within the 15,000 total of vulnerable males between 22 and 25. What such a loss would mean to the trouble-shooting of production problems can readily be seen by the following incidents. A shortage of a certain gun installation originally scheduled for Northrop's Black Widow called for a sudden change in armament. Working with an engineer, skilled technical men—the majority of whom were under 26—were able to incorporate a substitute installation on the production line in 10 days time.

At Lockheed there was a recent rush order for 100 kits of P-38 dive recovery flaps for use in field service tests. By putting an expert template maker, a tool designer and five top assembly and fabrication mechanics on the job, under the direction of Earl Harper, staff assistant to the works manager in the experimental department, the kits were ready in three weeks instead of three months. The skilled men were able to take an engineering preliminary outline, build a proving part and have the engineer approve the template from which the part was made.

Participants:

The agencies participating and their representatives follow: War Manpower Commission: Mr. McNutt, Lawrence A. Appley, Collis Stocking and C. Bradley Haight. Production Executive Committee: Charles E. Wilson, Donald D. Davis, Dr. J. W. Barker, Chief of Navy Industrial Personnel, Maj. Gen. L. D. Clay, Maj. Gen. O. P. Echols, Col. J. C. Wood, Col. E. F. Jaffe, Vice Admiral S. M. Robinson, Rear Admiral C. A. Jones, Captain Donald Royce, Navy representative at Wright Field; Commander Morris Duane, J. A. Krug, L. R. Boulware, A. H. Bunker and John Gregg, assistant to Bunker. Petroleum Administration for War: Ralph K. Davies, Michael Straus, Bruce Brown, Dr. F. H. Harbison. Solid Fuels: Charles Potter.

War Food Administration: Marvin Jones, Col. Philip G. Bruton and Wilson Cowen. Selective Service: Maj. Gen. Lewis B. Hershey and Col. Francis Keesling. Office of Defense Transportation: Brig. Gen. Charles D. Young and Otto S. Beyer. Office of Rubber Director, War Production Board: Col. Bradley Dewey, Morehead Patterson and Frank P. Downey. Maritime Commission: Rear Admiral H. L. Vickery, Daniel S. Ring and Lieut. W. A. Weber. War Shipping Administration: Capt. Edward McCauley, Marshall E. Dimmock and Telfair Knight. Federal Communications Commission: Commissioner E. K. Jett and Don Smythe. Fish and Wild Life Service: Dr. Ira N. Gabrielson.

Los Angeles Citizens' Manpower Group

This is the Los Angeles committee organized last September to concentrate community action behind the drive to obtain workers for war industries and keep workers in their essential jobs. Shown on an inspection trip of Lockheed Aircraft Corporation's plant are, first row, left to right—Ralph Smith, Douglas Aircraft Co.; Paul Armstrong, committee member; Le Roy Edwards, chairman of citizens' group; Cyril Chappellet, vice president of finance, Lockheed; Morris Pendleton, president of Plomb Tool Co. and vice chairman of citizens' group; and John P. Canaday, Lockheed's manager of public relations.

A MOTION PICTURE EVERY FLYER WILL WANT TO SEE

Takes you inside aircraft engines to show you...

- **What octane means. How it affects engine performance in a primary trainer, in an advanced trainer, in a fighter or a bomber.**
- **Why primary trainers are fueled with 73 octane gasoline, while fighters use 100 octane.**
- **What the answers are to many important questions about octane and its relationship to power. Answers that may save the pilot's plane or even his life.**

We are proud that the Air Forces Training Aids Division asked us to make this motion picture to be used in training cadet pilots. And proud that our know-how enabled us to come up with a film that has earned the technical approval of Wright Field, the Navy Bureau of Aeronautics and the C.A.A. "Power and Octane" is also being used by the Navy, Marine Corps and the Coast Guard. We are endeavoring to arrange limited showings for groups of non-service flyers.

U. S. Chamber Committee Favors Inter-Carrier Control

Also Recommends Action on Federal Aid Airport Program

THE U. S. Chamber of Commerce's Committee on Transportation and Communication took a definite stand last fortnight on a hotly-debated subject—the control of one form of carrier by another. Such control was favored by the group, which includes representatives of two major airlines.

The committee asserted that, "within reasonable territorial limits," the operators of one form of transportation should be permitted by law to operate other forms "upon making an adequate showing to the appropriate regulatory authorities that it would be in the public interest and would not unduly restrain competition."

Also favored by the group was a Federal aid airport program comparable to that under which highways have been developed.

The recommendations were approved by the Chamber's board of directors for submission to the Chamber's annual meeting, presently scheduled to be held at the Waldorf-Astoria in New York, May 3-5.

The two airline representatives on the Chamber's committee are W. A. Patterson, president of United Air Lines, and Ralph S. Damon, vice president and general manager of American Airlines. Chairman is Powell C. Groner, president of Kansas City Public Service Co. Railroad representatives include George D. Brooke, chairman of the board, Virginian Railway Co., and Fitzgerald Hall, president of Nashville, Chattanooga and St. Louis Railway. Also on the committee are L. O. Head, president of Railway Express Agency; Edward P. Farley, chairman of the board, American-Hawaiian Steamship Co., and Arthur M. Hill, president of Atlantic Greyhound Corp. William K. Jackson, chairman of the Chamber's special committee on international transport, is an ex-officio member.

Hall dissented from both the control and the airport recommendations, while Brooke dissented from the recommendation for Federal appropriations for airports.

On the control issue, the committee stated: "Operators of one form of transportation service should be permitted by law to operate other forms within reasonable territorial limits upon making an adequate showing to the appropriate regulatory authorities that it would be in the public interest and would not unduly restrain competition.

"Operators of different forms of transportation should be encouraged, under proper safeguards in the public interest, to coordinate their service through contractual arrangements."

Control should not hinder the progress of the new form of transportation, the committee said, adding that "a fundamental test should be whether the interests of the controlling party lie in promoting the use and development of the transportation agency which it proposes to take under control, or in repressing them." Such control will not result in absorption of all transportation agencies in a given area into one company or a few companies, it claimed, pointing out that independent companies will have advantages enabling them to compete, and their competition "should stimulate effort toward further improvement."

It said there should be territorial restrictions governed by the regulatory body. A company should not be permitted to use another form of transportation to penetrate territory of other carriers unless the regulatory body finds the extension in the public interest. Contractual arrangements, without actual unified control, might prove desirable in some cases, it stated, adding that approval of the regulatory body should be required.

On airports, the committee said that Federal funds should be matched by state or local funds for the same uses. In general, the recommendation followed that of CAA Administrator Charles Stanton for a Federal aid program similar to the highway program. Major part of the program should be reserved for periods of low business activity, and publicly-owned airports should be made self-sustaining as soon as practicable, were other recommendations.

The control and airport recommendations, together with others not relating to aviation, indicate the main conclusions of studies since last fall, Groner said, revealing that the committee will shortly issue a report on proposals for amendments to civil aeronautics laws. "We are looking forward to discussion of outstanding aviation question at the . . . annual meeting . . ." he said.

'Aviation: Guarantee of Peace'

Maintenance of an ample number of military airplanes, and a trained flying personnel supported by a healthy aircraft industry, is America's best guarantee of a lasting peace, T. M. Girdler, chairman of Consolidated Vultee Aircraft Corp., declared in a speech in St. Louis last month.

"To me it is unthinkable that after this bitter struggle is ended the American people will give up the fruits of our tremendous war effort," he said. "I cannot believe they will allow the most potent weapon in our arsenal of defense to return to its prewar status."

Loening Scores McCarran Bill; Lists Proponents, Opponents

THE RIGHT of young American aviators to a free enterprise system in postwar airline development was defended by Grover Loening, aircraft consultant to the War Production Board, in a recent address before the Los Angeles Chamber of Commerce. He charged that the McCarran bill is a possible steal on the young aviators' rights, and compared proponents of that bill to the pressure group who put over Prohibition "when the soldiers' backs were turned."

"The advocates of the 'billion dollar American flag airline' are a small, determined minority, but of such sincerity, competence, skill in propaganda, and adroitness that the very principles of freedom in competitive business development that our boys are fighting to come back to, are being seriously threatened," he said.

Loening related that on a recent round trip across the Pacific, he observed Navy air transport operations in comparison with the operations of Pan American Airways, whose president, Juan Trippe, is a strong advocate of the McCarran proposal.

"Pan American's service, I found, is slower, certainly no safer, and offering nothing in set-up or experience that a competitive situation could not improve upon," he said. "The lesson to learn is that we need not rely at all in having our eggs in one basket, and that in aviation development there are so many angles capable of change, improvement, and differences in judgment that it is impossible to get the best result without keen competition to stimulate it."

Loening charged that Pan American is waging "an all-out war to preserve and extend its unique position." He listed the "slim and curious assortment of advocates" supporting PAA.

"In addition to several dignified and portly Senators, whose air experience is limited to what they are told, the most important helpers in this monopoly drive are one lone domestic airline—United Air Lines—the Carnegie Foundation, and a group of railroad brotherhoods," he said. "As near as we can sum it up, all aviation interests, all other airlines, the Aeronautical Chamber of Commerce, the U. S. Chamber of Commerce, the National Association of Manufacturers, the State Department, the Army and Navy, the Civil Aeronautics Board, and an almost unanimous list of aviation experts, builders like Donald Douglas, and, above all, the war aviators, particularly the ones now engaged in so successfully flying the oceans of the world on much faster schedules than Pan American ever has achieved, are all dead set against this false trend in monopoly."

The monopoly idea in a democratic capitalism fails because "there are other citizens paying their taxes who want to have some fun also," Loening asserted.

"There are other aviators returning from the worldwide school of aviation of this war who will want to start companies of their own, who have a right to use the air road," he said. "They also want to share in the fun and the thrill and the trials and the acclaim of having successfully developed airlines. And I predict that the monopoly scheme will fail—unless we lose the war. America just does not want one of the most romantic future fields for its youth tied up this way."

New Martin Bore Adaptor Lets U. S. Gunners Throw More Lead!

THE problem lay in the gun interrupters, those devices which shut off turret guns as they swing past parts of their own planes. They were necessary, of course, to prevent shooting up your own ship. But, our gunners complained, the interruption was too long. Machine-guns, for safety, were shut off too soon before the stream of bullets traversed to the tail fin or wing, and did not resume until after very ample clearance on the other side. Enemy interceptors, quick to learn, made good use of these halts in turret-gun fire to get in telling bursts of their own. Why, our gunners asked, couldn't the interruption be shortened down to mathematical minimums?

How Martin Licked The Problem

To shorten the interruption, close clearances were needed. But gun interrupters were set by hand, and close tolerances were impossible. So to meet the problem, Martin engineers designed a high-precision tool, the *Bore Adaptor*. Used in conjunction with a standard borescope, this device makes possible the most delicate adjustments, permitting guns to continue firing until bullets pass within the proverbial hairsbreadth of plane parts in line of fire. As a result, U. S. turret guns can keep firing longer and can throw more lead! This Bore Adaptor is just another example of how Martin engineers pack more punch into U. S. warplanes . . . and it's a sample of the kind of ingenuity Martin will bring to bear upon the problems of peacetime production.

THE GLENN L. MARTIN COMPANY, BALTIMORE-3, MARYLAND, U. S. A.
THE GLENN L. MARTIN-NEBRASKA COMPANY—OMAHA

Martin
AIRCRAFT
Builders of Dependable Aircraft Since 1909

Martin bore adaptor (shown here) checks the positioning of the interrupter cams in a gun turret, by aligning the bore of the gun to the proper angle, with respect to a line which is tangent to any surface of the airplane, through the pivot point of the gun (proper angle to the predetermined).

March Production Viewed As Probable Wartime Peak

AIRCRAFT PRODUCTION reached its probable wartime peak in March with the additional "remarkable achievement" of surpassing its schedule by 1½%. Two new records were set. The 9,000 mark in numbers and the 100,000,000 mark in weight were topped.

"March production was notable in that all or practically all companies made their schedules and in notable examples exceeded them," Charles E. Wilson, Chairman of the Aircraft Production Board announced.

Warning that battle demands could alter schedules at any time, Wilson stated that March represented the planned peak for aircraft production "as far as we can see." The schedule for April is considerably below 9,000 planes due primarily to the termination of contracts for trainer and reconnaissance planes. Combat planes will therefore form a greater percentage of the total than in March but weight will remain at approximately the same level.

"The high spots in this good production month" were that the whole schedule was exceeded by 1½%; production by weight increased 9% and four-motored bombers set an unprecedented record by being 5% ahead of schedule. Assembly lines turned out 9,118 planes with a total estimated weight of 103,400,000 pounds, compared to February's output of 8,760 planes weighing 93,500,000 pounds.

Wilson said that in line with recent strategic emphasis, 86.5% of the total number of aircraft produced were tactical types, with practically all plants which manufacture these bombers, fighters and transports, meeting or exceeding their schedules—"and they were very difficult schedules," he emphasized.

Brig. Gen. Donald F. Stace of the AAF Materiel Command disclosed that the seven major West Coast airframe plants contributed 2,703 planes to the March total—"an all-time record delivery." With all plants on schedule, weight rose from 32,465,000 pounds in February to 36,015,000 in March.

Wilson attributed the overall production rise to standardization of the aircraft program and to the growing familiarity of the industry with mass production methods and with the plane types being manufactured. Asked about specific aspects of March production, Wilson said the Boeing B-29 schedule was substantially met and that production at Willow Run was "excellent." Brewster exceeded its schedule by 6%, going 10% above the February figure.

Maj. Gen. Oliver P. Echols revealed that efforts are being made to match production of long-range fighter planes with that of long-range bombers. He added that recent heavy losses over Europe had not led the Army Air Forces to "contemplate seriously" any more changes in aircraft design than usual. Wilson stressed, however, that the necessity of constant engineering changes to meet combat requirements would not diminish and would make it difficult to continue meeting future schedules particularly in view of the probable losses to the draft in the under-26-years age group.

Prophesying that the April schedule will be met despite gaps created by draft losses, Wilson expressed his confidence in the industry to put forth its best efforts to cope with this situation. He indicated that it could be effected by an intensive drive "to get more work out of the existing manpower," a move which helped achieve substantially more output in March.

Burden Sworn In

Secretary of Commerce Jones is shown, left, with William A. M. Burden, just after Burden had been sworn in as Assistant Secretary of Commerce. The new secretary formerly was Special Aviation Assistant to Jones, and now assumes the position vacated by Will Clayton, who has been appointed Surplus Property Administrator.

New WLB Airframe Panel Anticipated

Rapid changes are taking place in the Airframe Panel of the War Labor Board. Observers anticipate a complete change of personnel, excluding the labor members, within the next two weeks.

A new public member appointed to replace Tom Elliott is Benjamin Aaron, who has been with the War Labor Board since 1942 as chairman of the Tool and Die Commission for the Detroit area. Another change in the Panel set-up is being made with the creation of a research office which is expected to become a division of the Aeronautical Chamber of Commerce. Probable director of research is Randall Irwin, management-labor consultant to the War Manpower Commission.

As the final step, the East and West Coast Aircraft War Production Councils have each agreed to appoint an industry representative to complete the Panel's membership. Although both councils have discussed the problem at recent meetings, no nominations have as yet been made public.

With the Panel about to be permanently stabilized for the first time, UAW-CIO Vice President Richard Frankensteen has announced his belief that the Airframe Panel should be replaced immediately by an all-powerful aircraft commission which would have nationwide jurisdiction over all wage problems in the airframe, engine and parts industries. He declares that the need for equitable stabilization of aircraft wages throughout the nation on an "equal pay for equal work" basis requires the establishment of such a commission.

At present the Panel handles only cases pertaining to airframe manufacturers, although informed sources predict the inclusion of glider plants within its jurisdiction in the near future. Labor members of the Panel are pushing for control over the glider plants as the opening wedge which may bring eventual inclusion of the entire aircraft industry.

'Largest' Pontoons Placed on C-47

This new amphibian combat-transport is fitted with the "largest pontoons ever made," and with four-wheel landing gear that completely retracts into the floats, according to Douglas Aircraft Co., manufacturer of the plane. It is called the 'Duck.'

Curtiss SB2C Helldivers Attack Raboul

Helldivers

long range, hard hitting fists of the fleet

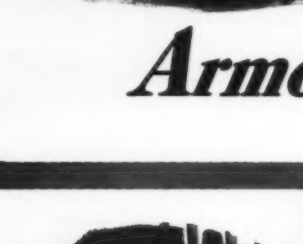
The stepping stones to Tokyo
are feeling the heavy tread of our march across the Pacific.
The reduction of these island bases has called for
an Army-Navy air attack team of unparalleled striking force.
Spearheading this attack has been the
Navy's fighter, torpedo-bomber, dive bomber team,
brought "to its highest point of effectiveness", the Navy reports,
by the performance of the Curtiss Helldiver.

CURTISS
ELECTRIC PROPELLERS

Curtiss-Wright Corporation, Propeller Division

Armor for the Knights of the Skies

Breeze Aircraft Armor Plate Brings 'Em Back Alive In World-Wide Theatres of Warfare



Wartime experience in heat-treating, welding and plating tomorrow will enable Breeze to manufacture products of the highest quality for peace-time use.

Breeze Armor Plate for America's fighting aircraft has brought home many a pilot and gunner, has saved not only valuable equipment, but priceless lives as well.

Manufactured by the Breeze Electric Heat Treating Process, this Armor is engineered in unusual shapes and sizes to designers' special requirements. The most severe tests, combined with actual use, have proved that Breeze Aircraft Armor Plate is unequaled in ballistic qualities and resistance to shatter. This is due not only to the special Breeze process of liquid carburization, but also to Breeze-developed methods of welding — quality workmanship which produces a joint as dependable as the Armor Plate itself.

In quantity manufacture today, Aircraft Armor Plate supplements the well-known Breeze line of accessories that are serving America on land, on the sea, and in the air.

Breeze BREEZE CORPORATIONS, INC. NEWARK, N. J.

PRODUCTION FOR VICTORY . PRODUCTS FOR PEACE

Canada's Nationalization Trend Minimized

Both Public, Private Airlines to Continue, Observer Predicts

By AUSTIN F. CROSS

(Special Canadian Correspondent and author of "The People's Mouths").

OTTAWA, CANADA—The present trend toward nationalization of Canadian airways need not scare those who are opposed, in principle, to public ownership of airlines. Actually, Canada is committed to a dual system of public and private ownership, she has had it since Confederation, and she is just as likely to have it another 77 years from now.

One has only to study the history of Canada to see how impossible it is going to be to make one strong, nationally-owned airline a favored monopoly, while the other privately-owned airlines languish in the shadows of official displeasure. A quick once-over of Canadian history will convince anybody that private airlines are here to stay. The fact that Hon. C. D. Howe, Minister of Munitions and Supply, and Mr. Big of the Stratosphere, is putting the quietus on Canadian Pacific Air Lines' expansion, is really going to be neither here nor there in ten years. Events will be too much for him, and history proves it.

'Forced into Public Ownership'

Go back and you will discover that Canada was forced into public ownership when she built the Intercolonial Railway. It was probably something better than the railways of France, but the old I.C.R. was never a very ambitious line, nor a very good one. It was riddled with political patronage, manacled with incompetent thinking, and shackled by politicians. The Intercolonial never went anywhere.

Then there came a time when the government had to take over—or thought it had to take over—the old Grand Trunk, and to this was added the Canadian Northern. These lines had certain elements of greatness in them, and under the genius of Sir Henry Thornton, they worked well. Were it not for the depression, they would have made a better showing in the Terrible Thirties.

But the fact is that there was created in the minds of many business men the convictions that Canada's government-owned railways were not always as efficient as the privately-owned ones. True, they had two strikes on them, when one assesses the crushing burden of fixed charges. You can argue back and forth as you like, but many people always felt that government ownership did not bring out the best in railways.

At the same time, the Canadian Pacific, privately owned, was a going concern from the start. They expanded all over the world, paid their bills as they went, and became everybody's idea of what a railway company ought to be.

Canada, with the population of New York State, rejoiced that we could hold our own with the big American and British companies, at least insofar as the C.P.R. was concerned. During a certain period, in the west, when operated as a monopoly, there were certain ruthless, perhaps thoughtless aspects of the Canadian Pacific that earned them a lot of ill-will on the prairies, and among the people out there, the C.P.R. still is doing penance. But generally speaking, throughout Canada, the Canadian Pacific is regarded as our No. 1, asset.

Having all this railway background in mind, it is hard to see how any government will be able to continue a policy of repressing Canadian Pacific Air Lines.

But going farther, this country is now reconciled to, and in fact is eager to preserve, a system where a privately-owned railway competes with a publicly-owned one. It is a strange anomaly that the Canadian people, who pay the shot for the C.N.R., actually like to see the C.P.R. flourish in opposition to it. By a stroke of the pen, they could legislate the C.P.R. out of business. They could have done it long ago. But the people want the C.P.R. *You can be very sure then that the people want the C.P. Air Lines.*

But there is another consideration. Ever since Confederation, Liberal governments have succeeded Conservative governments, and Conservative governments have succeeded Liberal governments. The present Liberal government has already been in power nine years. It might survive another election. But it can't last forever. Just as Republicans think that sooner or late, they will be in power again, and a Dewey or a somebody else will replace the almost perennial Roosevelt, so do many Progressive-Conservatives feel that their turn will come.

Go farther: what is the policy of the

CPAL "Seems to Be Into the Air to Stay"

(Austin F. Cross, American Aviation's Canadian correspondent, wrote the following concerning C. D. Howe's statement that Canadian railroads must divest themselves of their airlines):

No one here takes seriously, the edict of the Dominion government that the railways must get out of the airplane business.

Hon. C. D. Howe, Minister of Munitions and Supply, decreed in the House of Commons, that one year after the war, the railways of Canada must divest themselves of their airlines. That means the Canadian National Railways are to drop Trans-Canada Air Lines, and the Canadian Pacific Railway is to shed its Canadian Pacific Air Lines. The idea back of this transportation divorce is of course, to get the railways out of the old fashioned habit of competing with each other. Ever since the statute books created the Canadian National out of half a dozen variously owned roads, it has been competing with the Canadian Pacific. Then for a while, the C.N.R. had the air field alone, with TCA operating as a publicly owned adjunct to the Canadian National. But the latter day invasion of the sky by the Canadian Pacific sees promise of resumption in the air of the friendly wars where they left off on the ground.

Actually, if you change the TCA to some other form of government control, it will be the monumental metamorphosis of Tweedledum into Tweedledee. Should the TCA take another alias, an airplane line by any other name might smell just as sweet, but it still would be a government project. At very best, taking TCA away from the Canadian National Railways is simply a bookkeeping entry. Today the government controls the National Harbors Board, the Canadian National Railways, the Canadian Government Merchant Marine, Canada Atlantic Steamships, a dozen hotels, and a hundred other interests, and although they are all put down as different bookkeeping entries, they are still publicly owned.

The plain fact is that you can change the name, but you cannot change the principle of public ownership of these commodities. Similarly, TCA will still continue, regardless of name, to function as a government airplane line.

The Canadian Pacific Air Lines will also have to adopt a new name. Actually, you can do what you like in a legislative way, but no one in a democratic country can stop the C.P.R. from owning an airline. All you can do is to legislate the name out of business. It is well known, for instance, that the Consolidated Smelter at Trail, B. C. is a Canadian Pacific project. Other enterprises through Canada, such as the Lake Erie and Northern Railway, are known to be controlled by C.P.R. capital. All the Howe edict therefore does is to scramble the name a bit, revise the arrangement, but let the railway continue to control the airline.

People want to see the C.P.R. in the air transportation field. Their Duchesses, their Empresses, and their "Mont" ships dominated the high seas in peace years, and provided an Atlantic link between Europe and Canada. On the Pacific their Empresses tied up Asia and North America. The 51 percent of the stock they owned in the Canadian Australasian Line enabled them to keep the Antipodes in commercial touch with Canada.

Within the country, C.P.R. ships on the Great Lakes, and in the lakes of British Columbia, to say nothing of coastwise craft on both oceans, identified the C.P.R. as Canada's greatly respected, privately controlled, transportation system. Canadian people expect the C.P.R. to carry on in the air.

Therefore, the Canadian Pacific Airlines will only have to undergo the inconvenience of a new name, while still doing business at the same old stand. The Canadian Pacific seems to be into the air to stay.

Wilcox Radio Equipment Serves Braniff Airways

The major airlines of the nation depend on Wilcox equipment for reliable radio communications. In addition, Wilcox installations today are serving military operations in practically all parts of the world.

Photographs, courtesy Braniff Airways.

WILCOX ELECTRIC COMPANY

Manufacturers of Radio Equipment

Fourteenth & Chestnut ☆ Kansas City, Mo.

Conservative party? It can easily be summed up. It is pro-C.P.R., and it is pro-private enterprise. Never let it be forgotten that the old Conservative party fathered the C.P.R., and nursed it through its babyhood. As close a friend as Hon. R. B. Bennett had when he was prime minister of Canada was the late Sir Edward Beatty, head of the C.P.R. Proof of the matter rests in the fact that Bennett gave Beatty a title. Therefore, when the Pro-Cons get in again, sure as anything they will be looking after the C.P.R.

This does not mean they will sell the C.N.R. down the river. They'll look after the C.N.R. conscientiously. But just the same, there will always be a warm spot in the hearts of the Conservatives for the Canadian Pacific.

But there's proof that more than sentiment prevails. At a recent national convention of the Progressive-Conservatives, there were assembled delegates from Atlantic to Pacific. Their resolutions committee passed a resolution favoring private enterprise.

"What does that mean?" I asked one of their members on that committee.

"It means" said this delegate, with emphasis, "that we don't want the C.P.R. to go under, and we don't want monopoly, and we don't want the Canadian Pacific Air Lines to disappear."

"You mean then, that you are going to permit the CPA to offer transcontinental competition to Trans Canada Air Lines?"

"Certainly" he said, "why shouldn't we? The C.P.R. offers rail competition to the C.N.R. Why should TCA have things all to themselves? No monopolies for us. We want the CPA to have its own airline to the coast. There's business enough for both of them. We don't want TCA to suffer. But we don't want CPA to suffer either."

'Typical' Spokesman

Now it is perfectly true that one man does not make a policy. But he spoke for the resolutions committee, and it is pretty apparent that he is typical of all those favoring private enterprise.

The fact is that for the time being, TCA will be in the ascendant. There is no doubt that CPA will not be allowed to operate as a transcontinental airline. But governments do not last forever. Nor do officials. Sooner or later these figures will move off the scene, and others will replace them. There might be a brief adventure into socialism, but after it is all over, the sane peoples of Canada likely will go back to one of the old parties.

If the past counts for anything in the future, sooner or later the Progressive-Conservatives will get into power. Then they will see to it that Canadian Pacific Air Lines gets its chance.

But perhaps CPA does not even need that. With an era of transoceanic, transcontinental and round-the-world flying coming up, events may move so fast that the government of the day will be swept along by those events like a chip on the tide.

That being the case, it is easy to say how a government could no more hold back an airline than King Canute could hold back the tide with his broom. The Turks, the Japs, the Chinese all withstood progress and lived a curious inbred mediaevalism for centuries, but finally the walls came down like those of lamented Jericho, and the tide of progress flooded their ancient regimes. Things can move so quickly, and things will move so quickly, after this war, that no one can stand on Parliament Hill now, and blueprint the sky future of Canada.

Private enterprise is not being snuffed out of the air, by this government, as some people imagine. Private enterprise is just beginning to go places.

Farmer's Injunction Closes Allentown Airport to United

A TEMPORARY INJUNCTION obtained by a Lehigh, Pa., County farmer has forced United Air Lines to suspend commercial air service at Allentown-Bethlehem Airport, through which the company was serving the Philadelphia area.

Because of the somewhat unusual points of law involved, the case is being studied closely by both the Civil Aeronautics Board and the Civil Aeronautics Administration. One or both may appear in court when the case is heard. CAB authorized temporary suspension of UAL service at the field, effective Apr. 1.

The farmer, Frank Dlugos, and his wife, Mary, complained to the Lehigh County Court of Common Pleas that UAL planes frequently flew across their fields, which are across a road from the airport, at altitudes of 25 to 35 feet above the surface of the ground. According to testimony they presented, "This causes apprehension to workers in such fields and frightens plaintiffs' horses, which once ran away due to the noise and proximity of such planes. To date no actual physical damage has been done to Plaintiffs or their property."

Injunction Halts Operations

Judge James F. Henninger ordered that United be enjoined from Apr. 1 and until entry of a final decree, from operating any airplane above the plaintiffs' property at less than 100 feet. Because the property is near the 3,875-ft. east-west runway, the injunction makes it impossible for United to use the field.

When air service was suspended at Phiadelphia several weeks ago, United flew Philadelphia passengers as far as Allentown-Bethlehem Airport, and transported them into the city by limousine. Now, however, the company is not accepting passengers for either Philadelphia or Allentown-Bethlehem.

In his opinion, Judge Henninger stated: "The discussion of our problem begins with the familiar principle that every land owner is entitled to ownership of the space above the surface of his land to the heavens as well as extending indefinitely below the surface thereof. This rule is now limited in Pennsylvania by Sec. 401 and 402 of the Aeronautical Code of 1933, P. L. 1001, 2 P. S. 1467, 1468 which provides as follows:

" 'The ownership of the space over and above the lands and waters of this commonwealth is declared to be vested in the owner of the surface beneath, but such ownership extends only so far as is necessary to the enjoyment of the use of the surface without interference, and is subject to the right of passage or flight of aircraft. Flight through the space over and above land or water, at a sufficient height, and without interference to the enjoyment and use of the land or water beneath, is not an actionable wrong, unless said flight results in actual damage to the land or water, or property thereon or therein, or use of the land or water beneath.

" 'Flight in aircraft over the lands and waters low altitude as to interfere with the then of this commonwealth is lawful, unless at such existing use to which the land or water, or the space over the land or water, is put by the owner, or unless so conducted as to be dangerous or damaging to persons or property lawfully on the land or water beneath. . . .' "

After quoting the code, Judge Henninger said: "Plaintiffs' use of their land is for farming. Probably the greatest height achieved above the surface of the land is that of a man standing on top of a loaded haywagon, a total of 15 to 20 feet at the most and defendants ask us to find that that is the maximum distance heavenward to which Plaintiffs can claim any property rights or protection.

"Defendant's contention is too literal. The Code is in derogation of the common law and was enacted prior to the effective date of the Statutory Construction Act of 1937, P. L. 1019, and therefore it must be strictly construed . . .

"Plaintiffs are entitled to use their land for farming, their buildings as a home. Enjoyment of that use demands that airplanes shall keep at such an altitude and latitude as not to interfere with that use. The altitude must be such as not only to clear the heads of men and horses, but such as not to put them in fear. We must accept some compromise between the layman's exaggerated estimate of a plane's nearness and the aviator's feeling of confidence and control . . .

'Out of Spite' Case Cited

"In fixing our figure of altitudinal margin, we do not claim for it any more than a reasonabe guess." Judge Henninger then quoted a case (Comm. v. Van Bestecki, 30 D & C 137) in which a tower 98 feet high with almost invisible guy wires was erected alongside an airport "out of spite" and was held to be a nuisance. One of the respondents in that case, he said, testified that 100 feet was considered the minimum margin for flight at the edge of a field. He added that "the governmental regulations, however, recognizing the danger to passengers and public, have fixed as a desirable margin 500 feet over open country and 1,000 feet over built-up sections.

"While every plane landing and taking off must come to a start from scratch, it would seem that 100 feet altitude, excepting over airport property itself, is a fair margin to require, especially since one of the greatest hazards in aviation is at the point of take off and until the plane has achieved such altitude as to permit of unhampered manipulation.

"Counsel for respondents call our attention to the principle that preliminary injunctions should be granted only in clear cases. The answer to that is that this is a clear case of the infringment of an absolute right."

Judge Henninger said that "a most

interesting point in the case" is that the Dlugos family purchased their land from the airport corporation in 1933, after the airport was being operated. This, he added, does not prevent them from protesting a continued trespass upon their premises by users of the airport. "The very sale of the plot shows that airport authorities never contemplated in 1933 that within 10 years, planes would attain such weight as to require a longer runway in order to attain a safe altitude while still above property controlled by the airport. It is unfair, therefore, to charge a neighboring farmer with the foresight that was lacking in students of aviation."

The judge said he would make no decree relating to the Dlugos' claim that planes operated laterally too close to their home. "The evidence in that respect was too vague and the nature of their rights not nearly as clear. A part of the flight approach is taken from their lands and compensation for that land should have taken care of the diminution in the value of their adjoining land and buildings due to the intended use of the condemned land as a flight approach."

Allentown Airport Corp., operator of the field, and Lehigh Aircraft Co., which operates a Naval training course, were defendants with United, but the judge said he found no relation between them and United which would make them responsible "for the trespasses found."

Speakers at Detroit Air Cargo Meeting

The air cargo luncheon and conference sponsored in Detroit March 23 by Detroit Board of Commerce and Wayne University featured the above speakers: left to right—L. Welch Pogue, chairman of the Civil Aeronautics Board; Prof. Spencer A. Larsen, head of Wayne University's cargo research program; Secretary of Agriculture Claude R. Wickard; and Col. Edward S. Evans, president of Evans Products Co.

Failure of Administration To Plan Future of Air Transport Cited by Damon

The same "indifference and ignorance" which caused the Roosevelt administration to cancel the air mail contracts in 1934, and which delayed the appointments of assistant secretaries of war and navy for air until the shadow of World War II was upon us, have again failed to recognize the opportunities of air transportation in the peace, Ralph S. Damon, vice president and general manager of American Airines, charged in Worcester, Mass., last month.

"I hope that this same bungling will not be continued in the international air transportation field in the forthcoming conferences with other nations," he said.

Damon deplored the fact that the United States airlines today are operating with ony slightly more than one-half of their pre-war equipment.

"I protest that at this late date our administration has no announced plan for returning more airplanes to a transportation service which is today refusing priority passengers and vital air mail at a time when there is not enough air transportation to go around even for vital war purposes," he declared.

Accusing the administration of making transportation a whipping boy, Damon cited "the kicking around given to the wage increases of the railroad brotherhoods, operating and non-operating, within the last year, the stupidity in still refusing allocations of materials and productive capacity to make the spare parts so badly needed to repair transportation vehicles today."

"And aviation is getting an even greater share of the kicking around," he added.

Alaska Veteran See Big Air Future In Northern Industries

Joe Crosson predicts giant strikes for Alaskan aviation in the years following the war, an all-round expansion which will include development of private flying, internal air routes and important through services to international destinations.

The veteran of airline operations in the Territory, who recently resigned from Pan American Airways as head of the company's Alaskan division to become representative for Lear Avia, Inc., in Alaska, discussed postwar developments with *American Aviation* during a recent visit to Los Angeles.

Internally, Alaska has greatly expanded airways and communications due to war. Crosson feels that with peace these facilities will attract private flyers who will see in Alaska an ideal "touring vacation."

The territory's airlines, which numbered 40 before the war and since that time have in some cases consolidated or cancelled service, will come forth with solid plans for increased services, Crosson pointed out. "We have a country which relies on the airplane."

"You may expect both mining and farming industries to expand. Therefore, the territory's airlines will grow with these industries, reaching to the most remote parts of the territory. The minerals in the remote areas are waiting for development. Not only gold but quantities of strategic base metals are known to exist in the country which demands air service to tap its resources."

At present the Alaskan airlines are doing a 90% priority job, and in common with carriers in the States are desperately in deed of more equipment, according to Crosson. He thinks that postwar proposals for feeder planes indicate an ideal type for northern operations, with wheel operations on the main runs and ski operations for the off-line winter schedules.

International services are a natural for Alaska, in Crosson's opinion. "The war has shown that the route is flyable and there never could be any argument about the shortest distance to the Orient. There will be a central route through the territory for service to Russia and India, and another route via the Aleutians to China and Japan," he said.

Warplanes Impracticable For Peacetime Transport Operations, Says Trippe

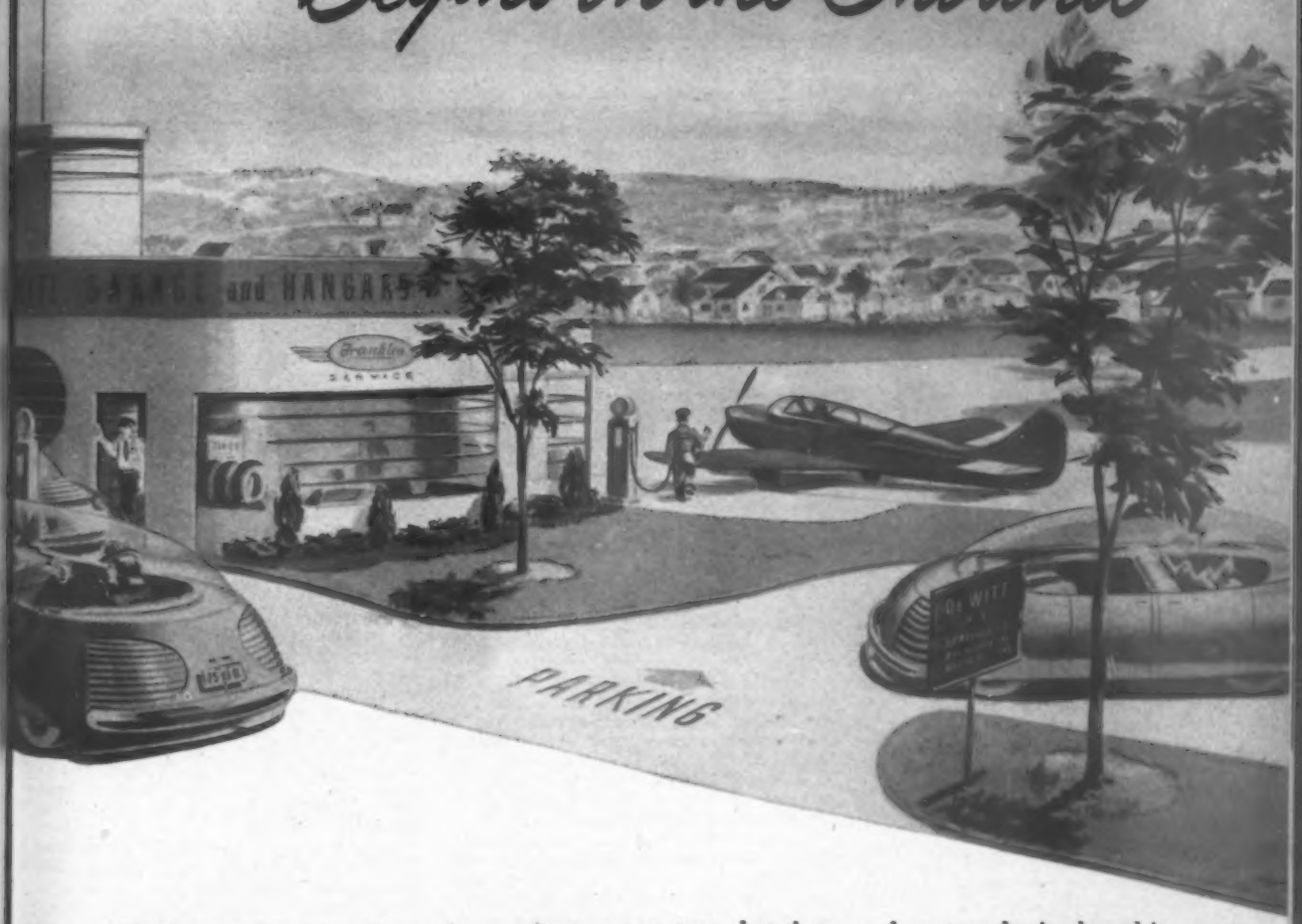
"The dazzling success of America's great war planes blinds the nation to their inadequacy in meeting the challenge of peace," Juan T. Trippe, president of Pan American Airways, declared in an address at the University of California last month.

Trippe observed that American bombers are designed to transport and deposit a heavy but concentrated load of bombs—"but to continue to utilize their weight-carrying capacity for peacetime transport loads is impracticable," he added.

"Even the present military cargo types will be inefficient for commercial use. They will be but stop-gaps and must soon be succeeded by new, more efficient, commercial types," he warned.

Trippe promised that Pan American's postwar planes will be of 12,000 hp. will cruise at 25,000 feet, will fly at 280 mph, and will carry 150 passengers "at less than half of the old rates."

THE "AIR AGE"
Begins on the Ground



WIDESPREAD ACCEPTANCE of personal planes depends upon these things: planes that are easy to fly, safe, dependable and economical, *plus adequate landing facilities.* For no matter how inexpensive they may be, or how practical in other ways, the planes we fly after the war will be really useful only if we can land anywhere we want to go, close to our destination.

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Report from London

Sinclair Discusses British Air Policy, Lists 7 Plane Types

By JOAN BRADBROOKE

IN THE House of Commons on March 14 Sir Archibald Sinclair gave brief details of seven types of aeroplanes intended for postwar British air transport and gave an inkling of the Government's ideas for international air routes. He was replying to the second Commons Debate on civil aviation within three weeks.

He repeated that there was at present no statutory bar to the operation of unsubsidised air services by British companies. But he doubted whether Paliament would approve a policy which left profitable routes to private enterprise and unprofitable routes for the State. He thought there was some way to go before unsubsidised operations would be possible on any but the most select routes. This is in direct contrast to the recent statement attributed to President Roosevelt, who plainly looked forward to air services operated entirely by private enterprise except on a few routes where economic operation is impossible.

He also said that the Government had made it clear that there was no immediate intention of obtaining facilities (by negotiation with other countries) for shipping companies to operate international routes.

Sir Archibald said that a Nation must control its own domestic airways and that the sovereignty of the air must remain with the country over which routes were used, although agreement by international consent could limit such sovereignty. British sovereignty over home territory and the colonial empire would remain unimpaired but the Nation would enter any international conference as an Empire, the Mother country and the Colonial people.

Only 'Limited' Freedom

Put together with previous Government statements this adds up only to a policy of freedom of international transit (rights of innocent passage) with each country retaining power over air traffic in its own territory and colonies but not permitted to refuse the transit rights of the airlines of foreign countries. In other words, limited international freedom of the air.

The seven types of aircraft have all been recommended by the Brabazon Committees, of which there have been two—one succeeding the other and making a detailed list of the requirements of each type recommended by the first Committee. The first Committee had recommended five types and considered that at least four war time aeroplanes could be suitably adapted for peace-time use. Sir Archibald said that the adaptations included the Avro York—a transport version of the Lancaster—a transport version of the Handley Page Halifax and the Short Sunderland flying-boat. (which is in service with B.O.A.C.).

Sir Archibald also mentioned the Avro Tudor (announced a few weeks ago in the House of Lords by Lord Beaverbrook) and said that designers had been chosen for four of the five new civil designs.

Lists 7 Types

The seven types listed by Sir Archibald are:—(a) the 100-ton Bristol Aeroplane Company's landplane intended for the Atlantic (this is the Brabazon Type I referred to by Lord Beaverbrook in the House of Lords previously); (b) a landplane with a loaded weight of 100,000 lb. which would be capable of operating the Atlantic route with a stop at Newfoundland and suitable for other long-range trunk routes. It would also have a pressurised cabin, as will the Bristol; (c) a four-engined aeroplane with a loaded engined aeroplane with a loaded weight routes (probably the Tudor); (d) a twin-intended for intermediate stages or trunk weight of 70,000 lb., pressurised cabin, and of 40,000 lb., for 30 passengers, with a pressurised cabin and intended for European and other short and medium range routes; (e) a revolutionary type which would apply the jet propulsion principle for civil purposes; (f) a landplane of conventional design with a capacity of 14 passengers intended for feeder lines in the Colonies, in oversea countries and on British internal routes; and (g) a smaller twin-engined type with a loaded weight of 8,000 lb. for up to eight passengers and intended for feeder and taxi services. A feature of this type would be its economical operation.

Naturally there has been some speculation as to the makers of these new civil types, but that one will be built by Airspeed Ltd. (Mr. A. E. Hagg's appointment as Technical Director and Director of Design of this Company at the beginning of 1943 was regarded at that time as significant) and another by de Havilland's is almost certain. There is no reference to a flying-boat in these aircraft although Short Brothers and Saunders-Roe were understood to be collaborating on one.

Sir Archibald also announced that there was a programme for large-scale adaptations of existing British aero engines for use in civil Air Transports and that new engines were being designed for the same purpose. He gave no date for when any of the new types of aeroplane are expected to be flying. Obviously that will depend upon the War, especially as Sir Stafford Cripps has announced that the British Industry is now concentrating on the production of new and heavier bombers.

Apart from the Government's announcement of the new types, little progress was made in the two most recent Debates. But had the small band of M.P.s who have consistently pressed the cause of Civil Aviation in the House for a number of years not persisted in their efforts the Government might still be thinking round the question without any definite action having been taken. The first Debate—on Feb. 29—was of little importance except that the Labour Party came out into the open and officially stated that its policy was full nationalisation and internationalisation for air transport.

Internationally owned and operated airlines is an ideal which the world may see one day, but at present most people would agree with Mr. L. Hore-Belisha (at one time Secretary of State for War) that now it is a bird that will not fly—though it squawks a lot. On March 14, apart from the Labour Party, most Members of the House agreed that they wanted an International Regulating Authority, a British or Empire licensing board, no more Government monopoly and—in this the Labour Party joined to make it unanimous—the transfer of the control of Civil Aviation from the Air Ministry to an independent Ministry or to the Ministry of Transport.

Persistent hammering in both Houses of Parliament seems to pry off crumbs of information from the Government.

BOAC Wants Home Airport

Meanwhile B.O.A.C. has announced the reorganization of the internal affairs of the Corporation and is pressing for a home airport. As it rightly points out it is homeless and has been since the beginning of the War, with no real home airport, which handicaps its planning for the future. B.O.A.C. has suggested a site within 12½ miles of Hyde Park Corner which would have a total area of some 2,800 acres—about 300 acres bigger than Idlewild.

B.O.A.C.'s suggested airport would have a water strip of 3,600 yds. long and seven land runways. Gravel subsoil with water some four feet below the surface would, according to Brigadier A. C. Critchley, Director-General of B.O.A.C., provide the water runway. The Government has not approved the site as yet and refused to be drawn when questioned about it in the House.

Both Lord Knollys, the Chairman, and Brigadier Critchley have been, and are, touring the Corporation's overseas routes and establishments. (Reports from overseas indicate that Lord Knollys is making a lot of forecasts on postwar services during his tour to Australia. Brigadier Critchley has just left for an unknown destination in B.O.A.C.'s first York).

One result of these tours has been a reorganisation and strengthening of the staff. Three Assistant Directors-General have been appointed, through whom, with the Regional Directors overseas, the executive authority will be exercised.

The new A.D.G.s are:—A. F. Burke, O.B.E., Technical Services; J. B. Beck, Administrative; and R. D. Stewart, Commercial. Mr. Burke joined Imperial Airways in 1935 and had much to do with

KLM Gets 3 Planes

KLM, Royal Dutch Air Lines, has been allocated three U. S. transport planes, presumably C-47s, for the Lisbon-England route operated by KLM for the British, a Dutch source has revealed.

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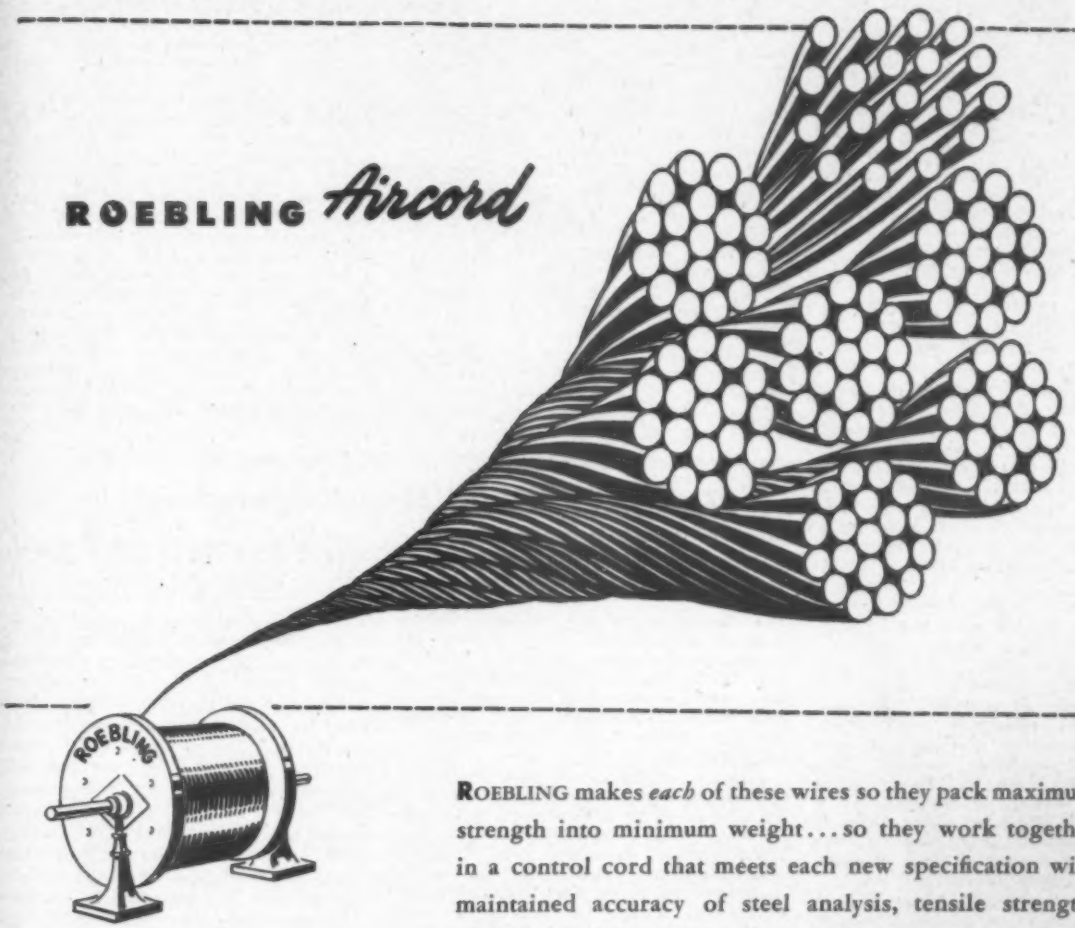

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the Empire Air Mail Scheme. In 1940 he was seconded to the Ministry of Aircraft Production for special duties in connection with the Aircraft Civilian Repair Organisation and was later appointed Technical Liaison Officer to the Controller of Research and Development. Then for a year he was Deputy Managing Director of D. Napier and Son Ltd. in connection with the production of the Napier Sabre engine. He returned to B.O.A.C. as Engineering Director about the middle of 1943.

Both Mr. Beck and Mr. Stewart have left the R.A.F. recently and both have had successful business careers—although not in air transport, or so far as is known in any form of aviation.

B.O.A.C.'s overseas routes are divided into the following regions, each with its own Director who is the local representative of the Director-General and responsible directly to him:—West Atlantic, headquarters at Baltimore; India and Burma, H. Q. at Karachi; Middle East, H. Q. Cairo; Central Africa, H. Q. Nairobi; Southern Africa, which includes West Africa, with H. Q. at Durban. A European region is being formed with headquarters in London.

The Deputy Director of B.O.A.C. is Major J. R. McCrindle, O.B.E., M.C. His main function is planning, technical development and external policy.

This reorganisation is designed primarily to meet war time conditions but includes a number of branches which will become fully operative only in peace time. In fact, B.O.A.C. proposes to do a certain amount of over-staffing so that it will be ready to take over the strain when the War ends. Special schools have been started for training B.O.A.C. personnel in all branches of airline work.

Rails Discuss Air Service

Three of the British main line railway companies, the Great Western Railway, Southern Railway and L.N.E.R., have referred to their future air services at annual meetings held during the past week. All have mentioned their interest in Continental services and their pre-war cross-Channel steamship services. The Chairman of the Southern Railway stated that the four main line railways had a large stake in the internal air lines in Great Britain already and that their Parliamentary powers enabled them to operate services to most of Europe.

The railways have been known to have plans for postwar air transport outside Great Britain but this is the first time that they have openly declared that such was their intention. This is particularly interesting at a time when Canada has declared that Canadian railways must sever all connections with Canadian airlines. As in other directions, the British Government's policy towards railway ownership of airlines is undeclared—although at present the railways have almost a monopoly on the internal air routes.

Figures for the operations of the railway-controlled group of internal airlines in Great Britain since 1940 were given at the G.W.R. meeting. They are:—5,000,000 aircraft miles operated, some 200,000 passengers carried and 5,000,000 lb. of mail and freight. The companies concerned in these operations are:—Railway Air Services, Scottish Airways, West Coast Air Services, Great Western and Southern Air Lines, Isle of Man Air Services, Western Isles Airways, Air Commerce and Olley Air Service. The last two are concerned with maintenance and not with operations.

Each week brings more evidence of the desire for a declared Government policy for air transport and stronger evidence that a majority would prefer several British companies instead of one. The two recent Debates in the House have shown more clearly than ever before that the Labour Party will oppose any repeal of the B.O.A.C. Act. The future of B.O.A.C. therefore probably depends on the progress of party politics.

There is a certain amount of irony in the fact that reports from some sections of the U. S. A. of comments on the proposed Brabazon Type I and Tudor indicate a feeling that:—"British competitors are making the most of their current monopoly on publicising their new aeroplane developments"— to quote one report. Any publicity given British projects has been achieved mainly because of the pressure in Parliament, which originated from members in both Houses simply because the U. S. A. was talking so much about postwar plans and was in a position to build transport types now. Great Britain does not expect to start producing any of these seven new types for some time to come (except perhaps the Tudor and Halifax conversion which would be useful for the Far East War), but the fact that the Government has definite plans at last is regarded as something of an achievement for those who have persistently fought for British Air Transport.

British Business Briefs

A showroom for British Aviation has been acquired by the Bristol Aeroplane Company in a corner window in Piccadilly. It was officially opened on March 2 by Lord Brabazon and ever since crowds have examined the Bristol Hercules engine and models of the Bristol Beaufighter and Beaufort which decorate the window. Although the showroom has been taken by the Bristol Company it will be put at the disposal of anyone connected with British Aviation for exhibits designed to emphasise the importance of Aviation to the British Empire.

The latest shipping companies to secure powers in their articles of association to permit them to operate air services are:—the Cunard Steam Ship Company, Thomas and John Brocklebank, and the Bibby Line.

B.O.A.C. has added two titled personalities to its staff recently. The Marquess of Headfort has been appointed B.O.A.C. Manager at Foynes, Eire, and Lord Willingdon has joined the Public Relations Branch.

Instone Lines Ltd. is a new company registered with a nominal capital of £10,000 to acquire certain assets belonging to or vested in S. Instone and Company, and to carry on the business of carriers by land, water and air. Originally, Instone Air Lines Ltd. (a subsidiary of S. Instone and Co.) was one of the first air line companies in Great Britain and one of the four companies almagamated to form Imperial Airways Ltd. in 1924. The Instone Brothers have always retained their interest in air transport and have been advocating against monopoly recently.

A new type of "drift" undercarriage has been developed for the Air Ministry by Mr. Owen MacLaren and Airwork Ltd., of Heston. This undercarriage enables aircraft to take off and land safely out of wind. The wheels of the undercarriage may be set at the appropriate drift angle of the aeroplane in relation to the wind and the runway. As a result the aeroplane can be landed out of wind despite the drift and maintains on the ground the crabwise movement which it has in the air. Several types of aeroplane have been tested with the "drift" undercarriage. They include an Airspeed Oxford, Miles Magister, Miles Whitney Straight and P-51 Mustang. The MacLaren undercarriage was invented before the War and was first test flown by the late F. D. Bradbrooke on the Arpin pusher monoplane with most promising results. Its subsequent development has been kept secret until now.

Tells of Technical Details Involved In Preparing Planes for Great Circle

A description of the technical details involved in preparing planes to fly Great Circle routes across Greenland, Northwest Territories, and Alaska despite cold, snow, and ice was given before the recent SAE National Aeronautic Meeting in New York by George A. Bleyle, Wright Areonautical Corp.

Primary objective of cold operations engineering tests. Bleyle suggested, is to fly 7,700 miles from New York to Chungking via North Pole instead of travelling 11,700 surface miles via San Francisco and Honolulu. Manila was said to be only 8,600 air miles from New York via Fairbanks, Alaska, as contrasted with 10,300 surface miles via San Francisco and Honolulu. Moscow is only 4,700 air miles away via Northern Iceland instead of 5,800 surface miles via Cherbourg and Berlin.

Asserting that in the Arctic regions it is frequently colder on the ground than in the air, Bleyle explained the uses of special fuels and oils, the application of heating devices for easier engine starting, and the requirements of engines, fuels, lubricants, batteries, and ground crews at Arctic airports. He reported that winter automotive gasoline will work—down to 20F below zero. Below that temperature special blended starting fuels must be used. Engines will start at slow speeds, but revision of starting motor and storage battery characteristics is foreseen.

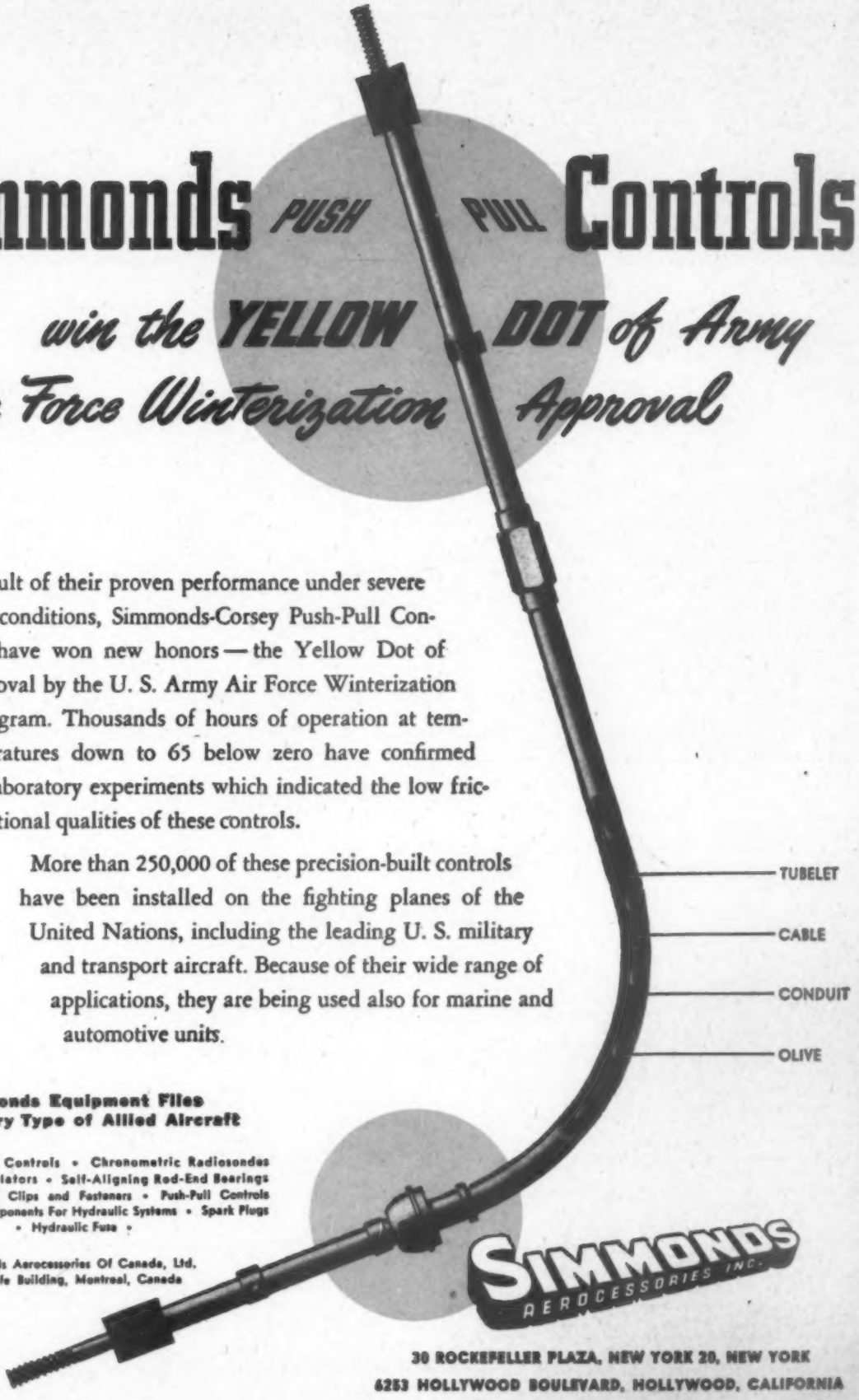
Placement of instruments in the same relative position on the airplane instrument panel was recommended by Lt. Commander R. E. White of the Navy's Bureau of Aeronautics.

Simmonds PUSH PULL Controls

win the YELLOW DOT of Army Air Force Winterization Approval

As a result of their proven performance under severe Arctic conditions, Simmonds-Corsey Push-Pull Controls have won new honors — the Yellow Dot of approval by the U. S. Army Air Force Winterization Program. Thousands of hours of operation at temperatures down to 65 below zero have confirmed laboratory experiments which indicated the low frictional qualities of these controls.

More than 250,000 of these precision-built controls have been installed on the fighting planes of the United Nations, including the leading U. S. military and transport aircraft. Because of their wide range of applications, they are being used also for marine and automotive units.



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A Salute to P. C. A.

On April 26 Pennsylvania Central Airlines celebrates its Seventeenth Birthday. Seventeen years of progress—seventeen years with Hamilton Standard propellers.

We extend our congratulations to Pennsylvania Central Airlines on an outstanding record of growth and achievement.

HAMILTON STANDARD PROPELLERS

EAST HARTFORD, CONNECTICUT

ONE OF THE FOUR DIVISIONS OF UNITED AIRCRAFT CORPORATION

Postwar Military Committee Policies to Affect Industry

HERALDED as the first step by Congress to coordinate Army and Navy affairs at the legislative end, the House of Representatives established a Postwar Military Planning Committee during the fortnight, drawing its membership from the ranks of both the Military Affairs and the Naval Affairs Committees.

Following unanimous approval of an authorization, the House speeded through an appropriation of $25,000 for the new 23-man group. Washington observers expect the Committee to swing into immediate action and lay the groundwork, at least, on which the nation's postwar military policy will be based.

Heading the Committee will be Rep. Clifton A. Woodrum (D., Va.), ranking Democrat on the House Appropriations Committee.

Military Affairs Committeemen who have been named to posts on the new group are:

Andrew J. May (D., Ky.), chairman of Military Affairs; Walter G. Andrews (R., N. Y.), ranking Republican; R. Ewing Thomason (D., Tex.); Matthew Merritt (D., N. Y.); John M. Costello (D., Calif.); Dewey Short (R., Mo.); and Leslie Arends (R., Ill.).

Naval Affairs Committeemen appointed are: Carl Vinson (D., Ga.), chairman of Naval Affairs; Melvin Maas (R., Minn.), ranking Republican; Patrick Drewry (D., Va.); Warren Magnuson (D., Wash.); Lyndon Johnson (D., Tex.); James Mott (R., Ore.); Sterling Cole (R., N. Y.).

Representatives from other House Committees named to the new Committee are: Schuyler Otis Bland (D., Va.), chairman of Merchant Marine and Fisheries; Alfred Bulwinkle (D., N. C.), chairman of the aviation subcommittee of Interstate and Foreign Commerce Committee; J. Buell Snyder (D., Pa.), chairman of the War Dept. subcommittee of House Appropriations Committee; Harry R. Sheppard (D., Calif.), chairman of the Navy Dept. subcommittee of the Appropriations Committee; James Wadsworth (R., N. Y.), author of the resolution to establish the new Committee and a member of the Foreign Affairs Committee; Leo E. Allen (R., Ill.) member of Committee on Accounts; D. Lane Powers (R., N. J.), active member of the Appropriations Committee; William J. Miller (R., Conn.), member of Post Offices and Post Roads Committee who has been one of the most active participants in aviation matters in the House since obtaining his seat in the last election.

The size of the postwar Army and Navy, the relative strength of the branches of the services, the organization of the military—including the matter of unification of command in Washington after the pattern on the war fronts, are a few of the far-reaching problems which will be scrutinized by the new Committee.

Although there appears to be a general concurrence of opinion in Washington that the military forces will be maintained on a strong basis for some time after the war, there is a divergence of opinion as to whether this should be a permanent policy. Secretary of State Cordell Hull's announced plan for gradual reduction of armaments on an international scale will run into staunch opposition in the Congress, particularly among Naval Affairs leaders who watched the results of the world's attempts at disarmament after the last war and adopted a slogan of "never again."

The switch in military emphasis from the Army to the Navy, anticipated when the international struggle is concentrated in the Pacific area, is expected to be continued in the peacetime period. In peacetime, it is pointed out, the Army will probably withdraw to within the continental United States and the Navy will emerge as the backbone of U. S. defense.

The peacetime role of land-based aviation is probably the most controversial matter confronting the Committee. Although support for a unified command is strong in Congress, proposals to place land-based aviation on an equal status with the ground and sea forces under the unified command will meet with formidable Congressional opposition.

Industrial facilities to maintain the postwar military organization will also come within the range of the new Committee.

The membership on the new Committee of Chairman Schuyler Otis Bland (D., Va.), chairman of the House Merchant Marine Committee and Rep. Alfred Bulwinkle (D., N. C.) chairman of the aviation subcommittee of House Interstate and Foreign Commerce, points to correlation of postwar commercial overseas air and sea transportation with the security set-up.

FDR Signs Synthetic Gas Bill

The President signed legislation authorizing the Government to invest up to $30,000,000 in the development of synthetic fuels, including aviation gas, last fortnight. The legislation was sponsored in the House by Rep. Jennings Randolph (D., W. Va.) and in the Senate by Sen. Joseph O'Mahoney (D., Wyo.).

Mitchell Package Guns

Frontal firepower on B-25 Mitchell bombers has been increased by package guns, two installed on either side of the nose. Workers at the modification center of North American Aviation's Kansas Division are shown applying a protective cellulose coating to keep moisture out of the guns until the plane goes into action.

Rep. Bender Wants Aviation Cabinet Post Created 'Now'

The future of postwar aviation in the United States has been entrusted "to men whose knowledge of aviation is academic," Rep. George H. Bender (R., O.) declared last fortnight in a statement calling for immediate creation of a cabinet post for aviation.

Commenting on the current status of international air conferences, he said in part:

"Our State Dept. has a series of reports prepared for it by members of its staff. But the vital importance of air transport in the world today, and the equally large role which it must inevitably play in the postwar era is being substantially ignored by the failure of our nation to give aviation the recognition it deserves.

"Our aviation industry has turned out the biggest and best planes in use today. By the time the war is over, we shall have the machinery for producing planes, and personnel to man them on a scale undreamed of 10 years ago. But we shall not command the prestige to which our productive capacity entitles us if we do not use the outstanding aviation leadership which we have also produced to head our aviation department. Our Navy would not permit itself to be represented at an international conference by men without intensive naval experience. Neither should aviation be represented in such a way. Our Government is surely destined eventually to set up a separate cabinet position for Aviation. The time to do that is now."

Present Aviation Insurance Practices 'Stifling' - O'Mahoney

A charge that postwar commercial aviation expansion will be stifled unless present aviation insurance practices are altered was made at a session of the Senate Judiciary Committee during the fortnight by Sen. Joseph O'Mahoney (D., Wyo.).

He introduced evidence from a compilation by the Air Transport Association to show that 96% of the aviation insurance in this country is monopolized by three firms, two of which are substantially controlled by foreign firms.

O'Mahoney read the four conclusions of the ATA report to the Committee: (1) there is no competition in the field; (2) profits are out of proportion to premiums collected; (3) rates are not scientifically computed; (4) present insurance rates constitute a burden on aviation.

The three firms which O'Mahoney alleged hold a monopoly over U. S. aviation insurance are Associated Aviation Underwriters, U. S. Aviation Underwriters, Inc., and Aero Insurance Underwriters. Associated and Aero, he said, are substantially controlled by British and other foreign interests.

Qualifying Age for Private Pilots May be Reduced to 16

NEW PROPOSED CERTIFICATION rules with reference to private pilots, one of which would reduce the qualifying age from 18 to 16, have been promulgated by the Safety Bureau of the Civil Aeronautics Board and are being circulated widely for comment and criticism.

This is the second of a series of steps to revise and simplify the Civil Air Regulations. The first related to a revision of Part 60 entitled, "Air Traffic Rules."

The principal changes in the certification rules follow:

(1) **Certificates and ratings.** Instead of issuing an Airman Certificate with the privileges of private pilot or commercial pilot as at present, it is proposed to issue a Pilot Certificate and show the designation as private or commercial pilot on the Rating Record. This would permit a person who holds, for example, a private Pilot Certificate and is rated for single-engine land airplanes to qualify as a commercial pilot on helicopters, without having also to increase his competency on single-engine land airplanes to the commercial level as is presently required.

(2) **Age.** It is proposed to reduce the minimum age for a private Pilot Certificate to 16 years instead of 18 years as at present. This would permit a person who secures a Student Pilot Certificate at the age of 16 to secure his private Pilot Certificate as soon thereafter as he is otherwise qualified without waiting two years merely because of the age requirement.

(3) **Education.** It is proposed to eliminate the specific requirement that a student or private pilot must be able to read, write, speak, and understand the English language if appropriate operation limitations may be entered on the Rating Record. This would permit, for example, a mute who is otherwise qualified and could pass the necessary examinations to obtain a certificate. Such a relaxation would not be feasible, of course, for a commercial, instruction, or instructor rating.

(4) **Physical requirements.** Two suggestions are offered with respect to physical requirements for student and private pilots. One proposal would prescribe a physical examination every two years to be accomplished by any qualified physician of the pilot's own choosing. Another proposal would prescribe but one physical examination by an authorized medical examiner of the Administrator taken at the time the certificate is first issued. From this time on it would be the pilot's own responsibility not to fly if his physical condition became such that he could not pass the original examination. In either case it may be that the examination can be more general in nature and consist of a determination that the applicant has adequate eyesight and no ailments which might cause him to become incapacitated suddenly or unexpectedly.

(5) **Aeronautical knowledge.** It is proposed that a student pilot prior to being endorsed for first solo cross-country flight in powered aircraft pass a written examination on (1) the pertinent provisions of the new Part which will deal with the operation of private aircraft, (2) the contact flight rules of Part 60, (3) safety practices and procedures, and (4) his ability to interpret aeronautical charts. No other navigation or meteorology would be included other than perhaps certain important elements of weather knowledge such as significant cloud forms, potential fog conditions, etc. After accomplishing such an examination no further written tests would be required to obtain a private Pilot Certificate. Comment is particularly desired on the elimination of the navigation and meteorology requirements. The Civil Aeronautics Administration is planning the preparation of a small booklet which will contain all of the information necessary in order to pass the written examination leading to a private Pilot Certificate.

(6) **Aeronautical experience.** It is proposed to change the present flight time requirements of 8 hours dual and 35 hours solo for conventional three-control spinnable airplanes to 10 hours dual and 30 hours solo and to change the present 5 hours dual and 25 hours solo in two-control nonspinnable airplanes to 7 hours dual and 20 hours solo. In either case the specified dual time would be the total dual time required in order to obtain a private Pilot Certificate and no minimum would be prescribed before first solo. It is believed that this item may be left safely to the discretion of the instructor since there would be little to be gained from an early first solo so long as a total amount of dual time is prescribed.

(7) **Aeronautical skill.** The proposed flight best for a private Pilot Certificate is modified somewhat and is as follows:

(a) Applicant for a powered aircraft rating must demonstrate his ability to completely perform the following maneuvers:

(1) a series of three landings from an altitude not to exceed 1,000 feet with engine throttled and a 180-degree change in direction, the aircraft touching the ground in normal landing attitude within 300 feet beyond a designated mark. At least one landing must include a forward slip;

(2) three moderately banked figure eights either "on pylon" or "around pylon," the variation in altitude not exceeding 200 feet;

(3) a 720-degree power turn in each direction in a banked attitude of not less than 60 degrees, the variation in altitude not exceeding 200 feet;

(4) a right and left-hand spin, each of at least one full turn;

(5) recovery from stalls.

(8) **Duration.** It is proposed to limit the duration of a Student Pilot Certificate to two years. It seems neither necessary nor desirable to issue permanent Student Pilot Certificates since the only reason for holding such a certificate should be the enabling of a person to acquire the necessary experience and skill to permit him to secure a private Pilot Certificate. Furthermore, the time necessary to secure a private Pilot Certificate should be materially reduced by reason of the proposed simplification of the requirements.

(9) **Airplane horsepower ranges.** The present limit of 80 horsepower as applied to the lowest horsepower range now used for rating purposes was established at a time when engines of 80 horsepower were about the maximum then used in so-called light aircraft. It appears likely, however, that due to the present trend in low-powered engine design we may reasonably expect airplanes of something more than 100 horsepower to be made available which have the same general characteristics as the presently used airplanes of 80 horsepower or slightly less. It may be appropriate at this time, therefore, to increase the 80 horsepower limitation to 130 horsepower, for example.

(10) **Commercial, instructor, and instrument ratings.** Practically no changes of importance are proposed at this time with respect to these ratings except in the matter of language changes, arrangement, etc. It will be necessary, of course, to include in the instrument rating written examination questions on the instrument flight rules of Part 60 and other meteorological and navigational questions inasmuch as these subjects have been left out of the basic requirements for a private Pilot Certificate.

P-51B Gets New Gas Tanks

This photograph shows for the first time the external combat gasoline tanks which contribute to the Mustang's range. The P-51B is credited by the AAF with having the longest range of any fighter in the world, says an announcement by North American Aviation, its manufacturer.

'Drive Yourself' Operators Turning To Aviation, Too

The American Drive-Yourself Association, representing operators of "drive-yourself" automobile services in every large city in the United States and Canada, is discussing formation of "Fly-It-Yourself" branches. The Civil Aeronautics Board has not as yet received any applications from members of the association who plan to operate planes as well as autos.

The new branches would answer the question of postwar flying for the tens of thousands of accredited pilots who will not be able to purchase planes after the war, the Association believes. It also will solve a problem for thousands of the large manufacturing plants who send salesmen about the country. Salesmen who can fly will be enabled to hire Fly-It-Yourself planes at any airport for trips to smaller cities and towns, saving considerable time.

Lightplane manufacturers are reported to be enthused over the association's plan. Some of them already have practiced renting planes to accredited pilots for short trips or a few hours flying in the vicinity of airports. Estimates on the cost of training civilian pilots at a special rate per hour of flying are being used as a basis on which to figure rental costs.

The association's proposed setup includes full insurance of planes and may possibly include supplying planes on a consignment basis which will allow operators to pay for them over a six months' or year term.

Wichita Featured on Map

A global map, showing the overland air routes connecting the important parts of the world, and featuring Wichita, Kansas, as the geographical and geodetic centers "from which the greatest number of global overland routes originate," has been prepared and distributed by the Wichita Junior Chamber of Commerce.

"Shower Bath" for the Axis

...COURTESY OF BELL AIRCRAFT

In addition to building in our Niagara Frontier plants,* thousands of Airacobra fighter planes for the U. S. Army Air Forces and their Allies, Bell Aircraft today is also one of the nation's largest producers of gun mounts and other specialized ordnance materials.

Many of our nation's bomber and fighter planes—P. T. boats and other surface craft—our cargo ships—are helping to shoot the Axis out of the war with guns swinging on one of the various types of Bell-designed gun mounts manufactured in Bell's new ordnance plant at Burlington, Vermont.

Bell Aircraft's Ordnance Division was started in order to develop for one of Bell's own planes a flexible gun mount which prevented the gun from "bucking" when fired and made it as easy for the gunner to control as a garden hose.

So successful was this new type mount that, with the cooperation of Army and Navy officials, we began designing and building machine gun mounts incorporating this same principle for other types of aircraft as well as surface ships.

We are proud of the trust the United States government has placed in the *Creative Ability* of our designers, the *Skill* of our workers and the *Management* of the Bell Ordnance Division.

When peaceful days return, this same trinity of talent will not only continue in developing better ordnance equipment, but will also turn to pioneering other developments to make the era of post-war living so worth-while fighting for now. © Bell Aircraft Corporation.

*And soon from the new Bell Bomber plant in Georgia, will come more planes to help speed the day of Victory.

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BELL *AIRCRAFT*

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PACEMAKER OF AVIATION PROGRESS

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THAT OUR PILOTS MIGHT *Outfight* THE ENEMY

A Legion of Curtiss P-40 Aces* and Double Aces† Win United Nations' Highest Honors

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DISTINGUISHED SERVICE CROSS (OAK LEAF CLUSTERS)

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SILVER STAR (OAK LEAF CLUSTERS)

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LEGION OF MERIT

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SILVER OAK LEAF CLUSTER
BRONZE OAK LEAF CLUSTER

DECORATIONS, MEDALS, CITATIONS OF OUR ALLIES

Britain . . . Distinguished Service Order (Bar), Distinguished Flying Cross (Bar), Distinguished Flying Medal.

France . . . Croix de Guerre (Palms and Star)

Russia . . . Order of Lenin, Order of Red Banner, Hero of Soviet Union, Order of Guards, Medal of Valor, Order of Red Star, Order of Georgian Republic.

China . . . Starred Wing, Cloud Banner (5th Order), Cloud Banner (6th Order).

* **ACES:** Those pilots with bag of 5 to 9 enemy aircraft to their credit. † **DOUBLE ACES:** Those pilots with bag of 10 or more enemy aircraft to their credit.

CURTISS P-40 . . . *Cradle of Heroes Born in the Sky*

Enemy hordes stalked the global skies! Into the blue against them flew pilots of the United Nations, airborne on Curtiss P-40 wings. This is history!

From the earliest days of World War II, these teams of plucky pilots and their Curtiss P-40's have swept the air in every theatre of conflict. On occasion, "lone wolfing". Other times in squadrons! Their total formed a mighty armada whose blazing guns have written an unparalleled saga of successful aerial combat.

In the battle-raked heavens throughout the world, these pilots have won undying glory, symbolized by distinguished military decorations. Honor the pilots!

Salute the scrappy Curtiss P-40 fighters which carried them to success. Together, against overwhelming odds, they fought to finally wrest air supremacy for America and its Allies.

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AIRPLANE DIVISION

Toward Winning This War

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MEMBER, AIRCRAFT WAR PRODUCTION COUNCIL, EAST COAST, INC.

Here's Story of How Roanoke Airport Made Money in 1943

THE STORY of how Woodrum Field, the Roanoke, Va. municipal airport, was able to realize a profit of $13,175.90 during 1943 was told to *American Aviation* recently by R. J. Dunahoe Jr., manager of the field.

Woodrum Field is one of the comparatively few municipal airports now operating in the black. Airport managers, gathered at Ft. Wayne, Ind., several weeks ago, emphasized that airports must become self-sustaining, that taxpayers do not object to footing part of the bill for the original cost of a field, but do object to making up continual yearly operating deficits.

The Roanoke taxpayers were no exception. Until 1937, their airport was leased to private operators for $75 a month. However, due to the failure of the lessee to pay the rental, the city took over the field, and gave Dunahoe instructions to make it pay its operating costs.

By the end of 1939, after three years of city operation, there were 27 private planes at the field, 195 pilots, 10 commercial operators, with over $10,000 income to the city—$600 above operating costs.

For 1943, Dunahoe's books showed that the largest part of the field's income came from gasoline and oil sales. During the year he handled 1,042,010 gallons of gasoline, realizing a profitable income of $35,-111.85. American Airlines, operating one daily round trip through Roanoke, paid the airport two cents a gallon for servicing their gasoline in their equipment. Pennsylvania-Central Airlines, operating a Navy training school, paid three cents a gallon. On government-owned gasoline, serviced only to government-owned planes, the charge was three cents a gallon. On city-owned gasoline, Dunahoe made six cents a gallon.

6,700 Gallons of Oil Sold

Sale of 6,726½ gallons of oil netted profitable income of $1,497.64 during the year.

Other sources of profitable income included: building rentals, $11,627.39; field lights (a charge made to pilots requesting lights for night landings), $1,649; state tax (refund of gasoline tax), $1,500; commercial operations, $1,306; plane storage, $666.50, and locker rental, $26.

Dunahoe explained that he insists upon having city-bought gasoline delivered to the airport in sealed drums rather than by truck. Drums, he pointed out, contain more than their marked capacity; i.e., a 50-gallon drum may contain as much as 52½ gallons. By keeping his gasoline "moving" he does not lose these extra gallons through evaporation, etc., and is, therefore, that much gasoline ahead. Profit on this gasoline, plus inventory of supplies and equipment, added $787.85 to profitable income, making a total of $54,-584.98 for the year.

Against this income were salaries of $11,195.99 and other expenses of $2,341.68 (supplies, fuel, electricity, insurance, etc.) giving a net profit above operational costs of $41,047.31. Field maintenance totaled $15,880.56, including wages, materials and equipment, resulting in net profit above operating and maintenance cost of $25,-166.75.

Capital improvements for the year cost $11,890.85, giving a final net profit of $13,175.90.

Woodrum Field cost $1,290,000, the federal government contributing approximately $1,000,000, the state of Virginia about $10,000 and Roanoke about $280,000.

Dunahoe pointed out to the city in his annual statement that this investment has attracted to Roanoke an annual payroll of $1,092,380, composed of personnel of the following: Martin-O'Brien Flying School, $180,000; Navy primary students, $90,000; PCA, $480,000; PCA's students, $212,400; Hicks-Kessler Flying School, $6,300; Woodrum Flying School, $6,300; Virginia Airmotive, $17,000; Roanoke airport department, $12,540; CAA general inspection, $6,000; CAA War Training Service, $29,860; CAA communications station, $18,420; CAA air traffic control, $18,680; American Airlines, $10,260, and the lunchroom, $4,620.

"This, gentlemen," Dunahoe said, "is the fourth largest payroll in the city of Roanoke, and this money was spent with the butcher, the baker and the candlestick maker in our community—not a bad yearly return on a city investment of $280,000."

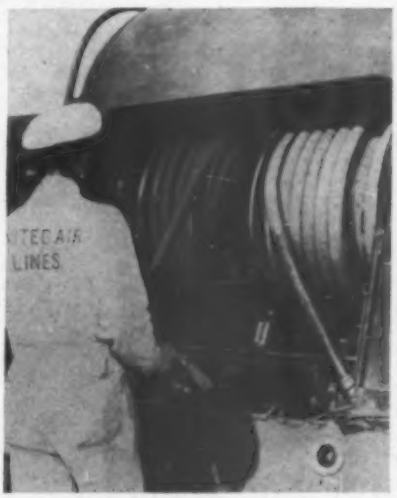
During 1943, students soloed and receiving instruction at Roanoke totaled 933. Airline passengers departing were 1,055; departing air mail, 3,650 pounds; visiting military planes for service, 2,376. The number of flight operations (landings and takeoffs) totaled 273,624, or an average of 749 daily.

Dunahoe foresees expansion of the airport in three major stages. The first will include extending runways to 5,500 feet, building a first-class administration building, erecting four more individual hangars and three hangars 100 by 100 feet. This, he believes, should be done within seven years. Following this, the second stage will include extending the north-south runway to 8,000 feet, building a new 8,500-ft. runway, and erecting a new passenger terminal.

At this point, he says, some of the concentrated activities must be shifted to auxiliary fields. The last expansion, to take place in the next 25 to 50 years, will include paralleling all existing runways and opening other adjacent areas for hangar and building space.

He urges that "now is the time for the city to buy all the land necessary for this expansion."

Saves Fueling Time



United Air Lines' E. C. Berr developed this gadget for saving time and energy in the fueling of planes. Observing that mechanic helpers were using valuable time to rewind rubber hoses on gas trucks, he developed a two-pronged brace which was placed in front of the central crank extension and a simple eye support in front of the shaft extension operating the right reel. Now, helpers are no longer forced to support the weight of the crank while doing this manual job, and can rewind the hose in approximately one-third the time formerly consumed.

8 Airlines Plan Chicago Loop Terminal After War

J. D. Crichton, of the design, buildings, and airports department of United Air Lines, is chairman of a committee representing eight airlines serving Chicago which is considering sites for an airlines terminal building in the city's loop.

"The airlines are starting now to plan this project so it will be available as soon after the war as it can be erected," Crichton said. "Chicago, the hub of the nation's air transport system, needs such a terminal, which will be similar to the one in New York opposite the Grand Central station. It will serve as a consolidated ticket office and a limousine dispatch base."

United Air Lines, Transcontinental & Western Air, American Airlines, Eastern Air Lines, Pennsylvania-Central Airlines, Chicago and Southern, Braniff Airways, and Northwest Airlines are interested in the terminal.

Urges Nation-Wide Network Of Inexpensive Landing Areas

A nation-wide network of inexpensive landing areas is required in the United States before private flying can be expanded, James C. Welsch, representative of the Personal Aircraft Committee of the Aeronautical Chamber of Commerce, declared in an address in Minneapolis last month. He also urged "drastic simplification" of the civil air regulations governing private flying.

Utility will be the key to the volume of personal aircraft use after the war, Welsch stated, and the existence both of plenty of community-sponsored airfields—that are not to be confused with the elaborate airports—and of regulations that, relatively, are no more complicated than those governing the operation of motor cars, are vital to adequate utility.

ALPA Pilots Oppose Weight Increases of Transports

By GERARD B. DOBBEN

AVIATION CIRCLES generally have been trying to assess the effect, beneficial or otherwise, to be expected from the informal hearing before the Civil Aeronautics Board on the proposal to increase the takeoff and landing weight of certain transport planes.

The hearing, which began March 29 and ended April 4, was dominated by David L. Behncke, president of the Air Line Pilots Association, and the 19 pilots who attended and testified during its course. ALPA not only opposed the proposal to increase the weights but passed resolutions urging the Board to remove provisional weight limits now in effect.

Tension which had been growing as the hearing progressed broke forth with some show of feeling when Charles Davison, counsel for the Air Transport Association, characterized the proceedings as a "bull session" and offered a motion that interested parties be given time to review the record so that they could offer motions to strike irrevelant and extraneous material.

Pogue—Davison Tiff

"Now just a minute, Mr. Davison," said Chairman L. Welch Pogue with some emphasis. "We don't care to have that sort of characterization given to a proceeding that we have been presiding over. I think that is a little strong language."

"Well I am very regretful of that, sir. I would be very glad to withdraw that characterization," Davison replied.

"I wish you would," said Pogue.

"I don't believe that what we call it has got anything to do with it. The pilots and their representative, Mr. Behncke, discussed any matter that came into their thinking or that they may have heard of in chance conversation with others, whether or not it was in any way connected with the subject of this proceeding," Davison asserted.

Behncke then arose, took exception to Davison's motion, asked that it be denied after stating that the pilots had full confidence in the Board reaching a proper decision based on all of the information which had gone into the record.

Charles F. Dycer, chief of Flight Engineering and the Factory Inspection Division of CAA, threw some light on the nature of the proceeding when he told the Board that he felt much good could come from a meeting of this kind because it brought together all parties who had an interest in the decisions and gave them an opportunity to express themselves. He said it had not been possible to get these groups together in a hearing of this nature before.

Chairman Pogue then explained in some detail why the Board had held an informal hearing. He said it had been the idea of the Board to get all of the information possible on the proposal to increase the weight limits, that it was felt that an informal hearing at which all parties might have their say would accomplish most in this particular type of case.

In view of the fact that witnesses were not sworn and there had been no cross examination in the manner common to formal hearings, he said he would deny the motion of Davison who had requested an opportunity to examine the record and file motions to strike certain of the material.

Davison then said that he could not permit certain of the statements which had been made by the pilots to go unchallenged, that he would file an answer. Pogue told him that the hearing would be formally closed in a few minutes but that he could file any report that he might care to, the same as any other interested party in the case.

The proposed amendment to the Civil Air Regulations provided, according to a CAB explanation that "the maximum authorized weights of airplanes now being used in air carrier operations may be increased provided that it can be shown that with the increased weights the airplane complies with the performance requirements set up for the transport category. For instance, it appears from the data now available that the weights of DC-3 aircraft equipped with Wright G202 or Pratt and Whitney S1C3G engines could be increased by 1000 lbs. for sea level operation with progressively smaller increases for operation at higher altitudes. This would require at sea level a run-way for take-off 4570 ft. long. The landing weight would also be increased 800 lbs. for landing on a runway 3460 ft. long. The weights for other types of airplanes used by air carrier may also be increased if it is shown that such airplanes comply with the transport category performance requirements."

Dycer and E. F. Ryder, chief of the Aircraft Section of CAA, testified concerning the tests which had been made which proved to them that the prescribed weight increases could be made without lowering the safety standards. Charles Froesch, chief engineer, Eastern Air Lines, Inc. read a statement into the record wherein many of the airlines joined in an endorsement of the proposed new regulations. Froesch pointed to the successful and safe operations under Army contracts where heavier loads had been carried regularly. He said the proposed increase in weight would enable planes to carry additional fuel supply amounting to 80 minutes of flight time, thereby making possible completion of more flights in bad weather and that the pay load could be increased, especially over short distances. The Air Transport Association also submitted a letter endorsing the weight increase in so-called Draft release No. 36.

Behncke Makes Statement

Behncke was then called upon for his remarks. In a prepared statement of some 75 pages, Behncke reviewed the history back of the proposals and cited countless examples of narrow escapes of pilots whom he asserted might not be living today had their planes been carrying an extra 1,000 pounds.

"Perhaps the best way to open this presentation . . . is to say 'Now come the representatives of all of the nation's airline pilots to object to the Civil Air Regulation Draft Release No. 36, the subject of which is performance and operating requirements for airplanes not certified in the transport category; in other words, a proposal to amend Section 04.71 and a new section, 61.713 of the Civil Air Regulations dealing with performance and operating requirements for air carrier airplanes not certified in the transport category,'" Behncke began.

"It is the well-considered opinion of

American Aviation Photo

In attendance at one of the "weight" hearing sessions were—front row, facing camera, right to left: John M. Dickerman, counsel, ALPA; David L. Behncke, president, ALPA; Karl J. Ulrich, contract negotiator and mediator, ALPA; Jerry Wood, EAL; and Orvis M. Nelson, UAL. Second row, right to left: G. T. Baker, president of National Airlines, Inc.; P. A. Coleman, engineer, Lockheed Aircraft Co.; Ronald Kinsey, Western Air Lines, Inc.; Gerard B. Dobben, AMERICAN AVIATION. Back of Coleman, right to left: A. T. Dallas, Air Transport Association and Charles Froesch, chief engineer, Eastern Air Lines. In the immediate foreground, Hershel Clark, National Airlines.

Kingfishers Catch a Big One!

CHALK off another Jap sub . . . a whopping big one!

First call to action came from an alert Australian gunboat, escorting a large troop transport convoy, outward-bound in the Pacific. In swift response to the electrifying flash—"submarine contact," a Navy Kingfisher alighted alongside the gunboat for detailed verification. Ocean landings and take-offs are but part of the day's work of Edo-float equipped Kingfishers—Observation Scout Seaplanes of the U. S. Fleet.

Information double-checked . . . Kingfisher Pilot Lt. (j.g.) Robert J. Clinton guns his ship, takes off straight for his unseen objective. Seconds grow to minutes. Minutes to five . . . to ten . . . while the safety of precious lives, ships and urgently needed cargo hangs in the balance.

In a scant 15 minutes after his take-off, Lt. Clinton sights his sub—only a tell-tale periscope cutting the waves. The Kingfisher dives to the attack.

Depth charge one . . . depth charge two explode dead ahead of the periscope. Marksmanship is excellent. Down goes the Jap submarine. A trail of air bubbles and oil mark its path.

But submarines die hard. This one bobs up five minutes later, bow first, at a steep angle. The only Jap that isn't treacherous, dangerous, is a dead Jap. And that goes for submarines, too. Pilot Clinton dives in to strafe. His machine gun sprays the deck of the sub—a large one. His only hope is to keep the crew from manning the heavy deck gun . . . a Kingfisher being the smallest Navy plane for combat duty.

Success seems almost at hand—but Clinton's machine gun jams! He zooms in a flash. The Japs reach their gun stations. AA fire breaks loose in a Hell of death. But Clinton and his Kingfisher hover high above. Keeping an eye on his wounded prey, Clinton calls for assistance.

Four more seaplanes, all Edo-equipped, come in for the kill. The surfaced submarine, circling wildly, is out of control. But her large forward gun and anti-aircraft guns blaze deadly fire.

Not a breeze stirs. The undersea raider lies shrouded in her own smoke. Behind this cover, Pilot Lt. (j.g.) Robert L. Gittings maneuvers unseen into position astern to launch the second attack. Two charges drop swiftly to the mark. Neither explodes. Their fuses had failed.

But there is no reprieve for a Jap sub with Navy Kingfishers overhead. Lt. (j.g.) Knute W. D. Lee, USNR, dives his plane. His first charge explodes 30 feet aft of the conning tower. Jap gunfire increases in intensity. Lee turns and dives again. His second charge hits home, within 10 feet of the starboard beam.

The blast sends a spout of water geysering 50 feet upward. And—in less than 60 seconds—the giant sub disappears for good.

Landing handily on the ocean, the Kingfishers pick up six survivors of the submarine's crew. No doubt about the importance of the sub. It was one of Japan's largest undersea craft. Bad news for Tokio. But one more example of how Edo-equipped Navy Seaplanes are contributing materially to our mounting record of victories in this global war.

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the highly experienced pilots present here . . . and who are actually flying the yesteryear equipment which we are considering here today, that it will not perform with the proper margin of safety under the gross weight and related requirements that CAR Draft Release No. 36 seeks to establish," Behncke continued.

"Recently in the industry, there has been a pronounced effort to reduce weight of airline aircraft so as to be able to increase pay load," Behncke stated. "To illustrate just how much the spotlight is being focused on pay load, in a number of nationally circulated aeronautical magazines, in an advertisement the distinguished air traffic expert, Vice President Charles A. Rheinstrom of American Airlines, Inc. is quoted as having said 'American evaluates a pound saved on a plane at $600."

Does Some Figuring

Behncke then did some figuring for the Board, asserting that if this additional 1,000 pounds of weight were added to the provisional increase of 800 pounds now in effect, American could realize an extra $1,080,000 over the five year life of the plane. He said on the same basis, Eastern, with its fleet of 20 planes, would realize an extra $12,000,000 which he added: "Isn't hay."

He claimed many of the accessories used by the pilots had been removed from the plane to lighten it and make possible an increase in the pay load.

"We have no quarrel with this trend when it does not affect safety," he stated. "Mark you all, and mark it well, that unless we keep a proper cushion of safety in airline equipment and airline operation, the public just isn't going to fly because while the American public is impatient and will do anything—almost anything—to save a few minutes . . . and get some place in a hurry, it is not in a hurry to die," he stated.

Behncke then stated that the design weight of the Douglas DC-3 was 24,400 pounds, that through heavier engines, de-icers, gasoline dump valves and heavier propellers, its provisional weight had been brought up to 25,200 pounds. Asserting that the design model was eight years old, to add another 1,000 pounds was like placing an additional pack on the back of a worn out old work horse.

With reference to increasing the take-off weight of the Lockheed Lodestar from 18,500 to 19,500, he told the Board it was strange that two entirely different airplanes, one of which had a gross weight of more than 6,000 than the other, should both be considered for a 1,000 pound weight increase.

Behncke took an entire day to complete the reading of his statement. He emphasized the fact that possibly the provisional extra weight which these planes were now carrying might explain some of the mystery accidents of recent years.

Narrow Escapes Told

Another two days was required to obtain the testimony of the pilots. Most of them told of some of their narrow escapes and all said an additional 1,000 pounds of weight could have meant the difference between a safe landing and an accident or possibly death. Many of them relayed experiences which other pilots had in bad weather, in turbulent air or iced-up wings.

Compare Today's Global Flying With 1924's

These United Air Lines pilots, who today are making routine flights on the global airways of the Air Transport Command, got together April 6 to discuss the first world flight 20 years before, which took 175 days. Left to right—Captains Richard Craine, Harry Huking, Virgil Vaughan, James Johnson, and James Belding, who together have chalked up a total of 11,500,000 miles of flying, enough to circle the globe 460 times.

After their testimony, Behncke offered a set of resolutions, one of which asked that the provisional weight limits be discontinued, that a pilot be permitted to reduce the gross weight to a point deemed necessary for the safe conduct of his flight through anticipated conditions, that a regular airline pilot be made a member of the investigating board of all accidents, that a further study be made concerning gust load safety factors set forth in Part 04 of the Civil Air Regulations, that an airline pilot shall participate in all airworthiness and acceptance tests bearing on performance requirements, that before approval certificates are issued by CAA for new model air line aircraft, destruction tests shall have been made and finally that legislation reestablishing an independent air safety board be initiated and passed as quickly as possible.

Douglas Man Uses Blackboard

Dr. W. B. Oswald, chief of aerodynamics, Douglas Aircraft Co., spent a half day, much of it at a blackboard, in an attempt to answer the statements made by the pilots. He had urged the Board not to permit the shackling of progress in the improvement of airplane design. He demonstrated the favorable factors which tended to make the DC-3, operated under the new weight proposals, even more safe than present day operations under the old regulations. This was due to a number of factors, he said. He pointed out that the new weight categories would apply to only those planes which had the larger and more efficient power plants.

"We should not discontinue the provisional weight limits now in effect," Dr. Oswald told the Board, "nor should we permit the adoption of these retroactive restrictions which might tend to discourage improvement in airplane design."

The young engineer said there was no one more interested in the safety angle than the Douglas Aircraft Co. He said the company had always made changes whenever it would contribute to greater safety and sometimes changes had been made to satisfy all concerned even when the company felt no particular benefit would be derived from such a change.

He expressed the belief that the application of the new regulations embodied in Draft Release No. 36 which would permit an increase in take-off and landing weights on DC-3 planes which come within the air transport categories would be well within existing safety standards in fact his testimony indicated that the margin of safety would be increased materially because of all of the new conditions imposed by the new regulations.

Dr. R. S. Schairer, head of the Performance group and J. R. McGowen, head of the CAA Liaison, both of Douglas, assisted Dr. Oswald in answering the specific charges and complaints which had been raised by the pilots in connection with their testimony based on their flying experiences.

Philip Colman, engineer for Lockheed Aircraft Co., gave the Board information regarding performances and flight tests of the Lockheed Lodestar 18 which he said definitely proved that the plane could operate under present safety standards under the proposed increased loads. E. J. Kershaw, vice president in charge of operations for National Airlines, Inc. testified on the successful experience the company had had with increased weights in cargo operations under military contract.

Stanton Appears

Early in the hearing, Charles I. Stanton, administrator of CAA, explained to the hearing how the tests were conducted on the DC-3 which lead the CAA engineers to the decision that the weights could be increased in keeping with present safety standards. He said the plane had been tested during some 60 hours of flight, although all of it was done before the present weight increase proposals had been formally announced. The tests were made in response to requests, many of them from the Army, for an increase in load limits.

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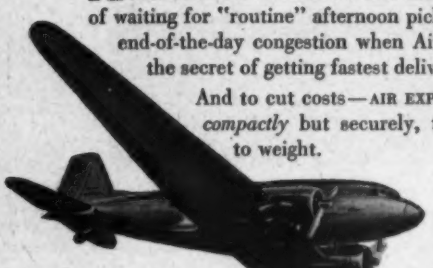

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Traffic

AIR EXPRESS DIVISION, Railway Express Agency, reports that air express shipments and poundage marked up new all-time monthly highs in November, totaling 137,445 shipments weighing 2,868,093 pounds.

MID-CONTINENT AIRLINES announces that its revenue passenger miles in February totaled 1,323,152 as compared with 1,337,630 in January. Mail-pound miles in February totaled 38,071,563 as against 40,965,600 in January. Express-pound miles in February were 3,370,251 as compared with 4,608,856 in January. Gross revenue for February was $132,938.79; net earnings for the first two months, after taxes, $26,671.08.

NORTHWEST AIRLINES carried a total of 487,897 pounds of air mail in February, as compared to 259,346 pounds during the same month last year. Mail-pound miles for the 29-day month totaled 388,087,762, an increase of 186,744,202 air mail pound-miles over that for February, 1943.

CANADIAN PACIFIC AIR LINES reports that 13,535 passengers were carried during the first two months of the year, an increase of 80% over the corresponding period of last year. Goods carried totaled 1,807,800 pounds as well as 323,426 pounds of mail. Passenger miles flown totaled 3,625,800, an increase of 70%, and mail-pound miles were 139,076,000, an increase of 14% over last year.

TRANS-CANADA AIR LINES carried 22,795 passengers, 625,251 pounds of mail and 155,783 pounds of express in the first two months of the year. The number of passengers increased by 5,330 over the same period last year; mail volume by 88,982 pounds and express by 60,660 pounds.

Northwest Stockholders Given Right to Subscribe To 117,460 More Shares

Northwest Airlines, Inc., stockholders were given the right to subscribe for an additional 117,460 shares of the company's common stock at $16 a share in the ratio of one new share for each two shares held as of March 25. These rights expired April 8. Unsubscribed portion of the stock is to be offered to the public by an investment banking group headed by Auchinloss, Parker & Redpath.

Proceeds from the financing will be used for general corporate purposes. Upon completion, the company will have outstanding 352,380 common shares out of 600,000 authorized.

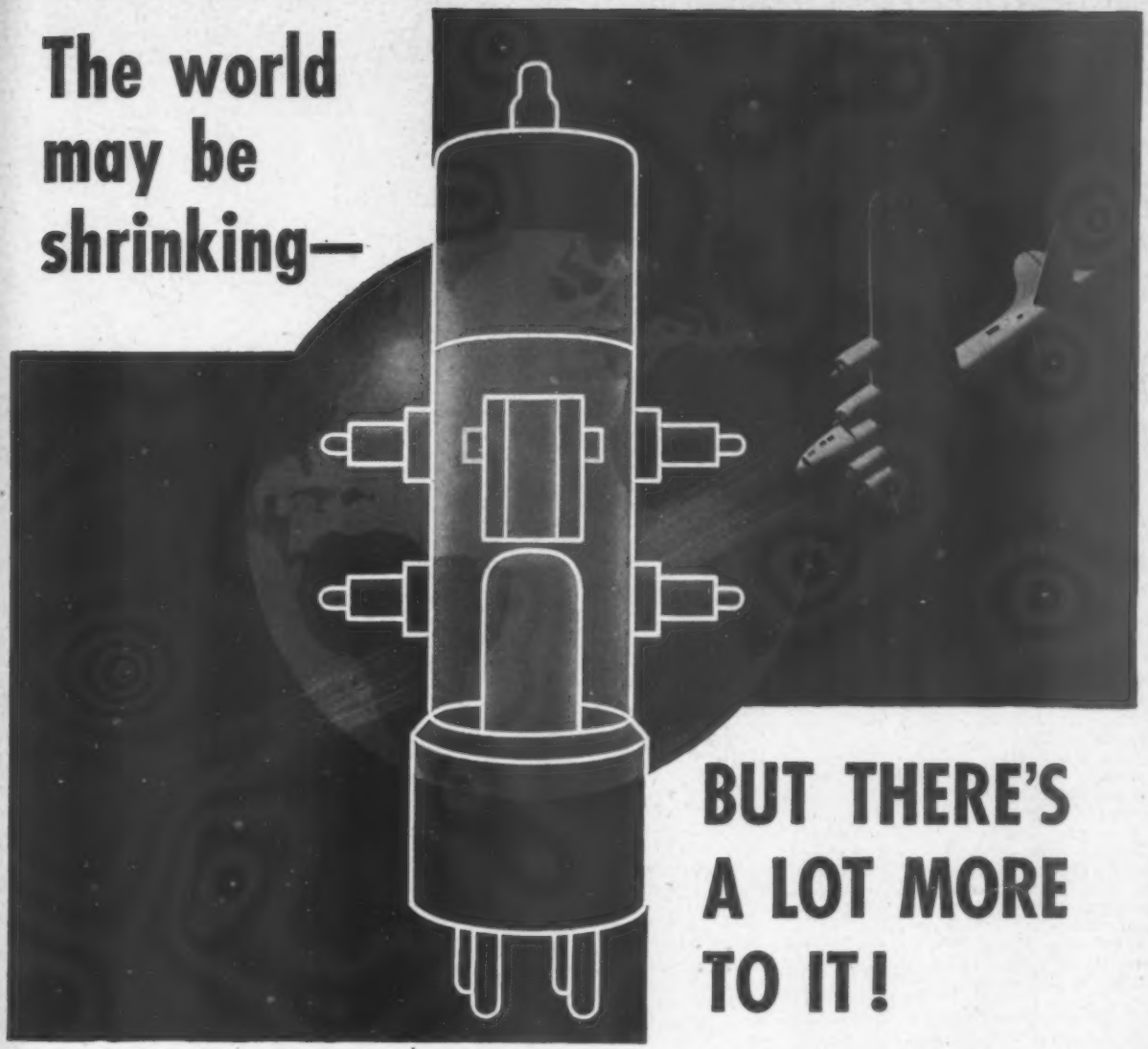
PAA Buys Into Bahama Line

Pan American Airways has purchased a minority interest in the Bahamas Airways from Harold G. C. Christie, it was announced in Nassau April 8. The company has plans to operate after the war a fleet of planes on regular schedule to the principal islands of the Bahamas group, connecting with PAA's Miami-Nassau schedules.

Braniff Starts New Service

Braniff Airways on Apr. 10 inaugurated service into Nuevo Laredo, Mexico, where it makes connections with Cia Mexicana de Aviacion, Mexican subsidiary of Pan American Airways, for Mexico City. Passengers clear U. S. customs at Laredo, Tex., fly across the border and clear Mexican customs at Nuevo Laredo.

The world may be shrinking—



BUT THERE'S A LOT MORE TO IT!

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Decision on Clear-Cut Feeder Policy Appears Unlikely

Principals Argue Examiner's Report at CAB Hearing

ALL FORMS of transportation, except the steamship, came to grips last fortnight over who is to participate in the field of postwar aviation, during the oral argument before the Civil Aeronautics Board on exceptions to the recommendations contained in the examiners' report on the Local-Feeder-Pickup investigation.

The report of Examiners William J. Madden and Albert F. Beitel was subjected to a rigorous test and generally speaking it stood up well considering the wide variety of interests which were affected by its conclusions and recommendations.

After two days of argument, it became evident that the Board will have considerable difficulty in announcing a clear-cut policy with reference to the future expansion of American aviation. When the hearing on Local-Feeder-Pickup applications was held last fall, it was the hope of all interested in the development of postwar aviation that some such clear-cut policy might come out of the exhaustive investigation. But it now appears that legal obstacles may prevent the Board from announcing a definite policy which will determine just who is and who is not going to have a part in the airline expansion of the future.

Judicial Determination Likely

Whatever policy eventually comes forth will be through the slow process of judicial determination, case by case, it appears reasonably certain.

Paul M. Godehn, counsel for United Air Lines, Inc. probably threw the most light on just what the Board's dilemma is with reference to the question of announcing specific policies. Regardless of the construction which may be placed on Sections 401 and 408 of the Act with reference to the intent of Congress as to prohibiting surface carriers from entering the air transport field. Godehn told the Board that legally all forms of transportation were entitled to their day in court and that legally it could not lay down a hard and fast policy whereby their cases would be pre-judged before the actual hearing of their applications.

Godehn told the Board that it might deal with the future policy of aviation expansion in generalities but it could not say in advance that surface carriers are to be excluded.

By consolidation of a large number of applications covering route proposals for a definite area which have been submitted by all forms of transportation agencies, and then hearing the case, the Board could decide whether "you're going to let a railroad in," Godehn stated. Similarly Godehn inferred that the same procedure would probably have to be followed with reference to many of the other recommendations of the examiners, such as the prosposed restriction which would keep existing carriers out of cities of 25,000 and under, the proposed air mail pay rate of 25c a mile and the prohibition against further extension of air mail pickup except when combined with passenger operations.

The two days of argument disclosed that there is no disposition on the part of the existing air carriers to abandon the so-called local and feeder field to new applicants. Most of the carrier's argued strenuously against the examiners' recommendation which would keep them out of cities with a population of 25,000 and under.

Board too Conservative?

Alexander C. Dick, counsel for Colonial Airlines, Inc., suggested that the regional carrier operations now provided the Board with a ready made laboratory as to the potentialities of local service. He inferred that the Board was overly conservative, probably because once it awarded a permanent certificate, the U. S. government was more or less permanently committed to supply a mail rate on the basis of the carrier's need.

"You have been an island of frugality in a Pacific Ocean of government liberality," Dick said. He then suggested that the Board award temporary certificates which could be revoked if it appeared there was little chance of the carrier ever getting on a self-sustaining basis.

Robert Driscoll, counsel for Greyhound Corporation of Chicago, which has applications on file for some 78 helicopter routes covering nearly 49,000 miles, said that some device must be worked out whereby the field could be reserved for future helicopter operations. He suggested that if the Board did grant new local services, it be done on a temporary basis so that the so-called fixed-wing operators could go into the local field with their eyes open, forewarned that they might have to give way later to a better service, such as he said could be provided by the helicopter.

Homer S. Carpenter, also counsel for Greyhound, said his company expected to reap its principal air traffic from among those who now use the private automobile. George A. Spater, of TWA, attacked this theory, claiming that the freedom of movement by automobile would forever preclude a scheduled helicopter point to point service from making any great inroads in the private automobile passenger field.

Refers to Jet Propulsion

Wilmer A. Hill, representing State Airlins, said if the Board was compelled to reserve a place for the helicopter, it might later be compelled to wait for the jet propulsion plane.

He further stated that Section 408 of the Act was clear that Congress intended to put a serious handicap on surface carriers who might desire to enter the air transport field. He said this proviso was born out of the experience which the country had with the railroads in driving the water carriers from the inland waterways.

Many of the applicants expressed the opinion that the local field should be developed by an independent operator lest existing carriers, where two or more were serving the same city, would feed the local traffic to their line to the disadvantage of the other carrier.

Austin M. Zimmerman, counsel for All American Aviation, Inc. asked the Board to extend its routes to 6,000 miles so that new economies of operation might be effected in the interests of a lowering of mail rate. Zimmerman said the government was now making a profit from his company's pickup operations.

John M. Dickerman, counsel for the Air Line Pilots Association opposed the recommendation to permit one-engine, one pilot planes to be used in passenger operations, on grounds that it would lower the Safety standards now in practice.

EAL, AA, C. & S. Argue

E. Smythe Gambrell, counsel for Eastern Air Lines, Inc., Robert Griffith, for American Airlines, Inc., Richard A. Mauer, for Chicago & Southern all argued against the prosposal which would bar existing airlines from entering cities of 25,000 population or under.

Ralph E. Young, represcenting Automatic Air Mail, Inc., Walter Roche, for Southwest Airways, Co., Roy St. Lewis, for Page Airways, Inc., Russell B. James, for Burlington Transportation Co., Ernie Adamson, for W. J. Dillner Transfer Co., William Ong, for Consolidated Airlines, and Leland Tolliver, for the Public Service Interstate Transport Co., argued in behalf of their respective companies.

V. Rock Grundman, public counsel, took the position that the Board clearly held the power to determine the surface carrier issue in connection with new route cases. He said that while he felt the Board had authority to limit mail pay to 25 cents a mile, this point was not entirely free from doubt. He expressed the belief that the Board could attach conditions to a certificate governing the type of equipment to be used. He felt that air mail pick-up should not be extended unless it was based on an expressed need of the postal service.

Harllee Branch acted as chairman in the absence of Chairman L. Welch Pogue who was ill. Other members who listened to the argument were Oswald Ryan and Josh Lee. All three members asked many questions during the hearing.

RESULTS OF ENGINE FAILURES IN AIR CARRIER OPERATIONS — FIG. NO. 1

ENGINE CLASSIFICATION	FAILURES	ACCIDENTS	FORCED LANDINGS	AIRPLANE DAMAGE	NUMBER OF PERSONAL INJURIES	
					INJURIES	FATALITIES
STRUCTURE	798	2	6	2	0	0
FUEL SYSTEM	145	0	0	0	0	0
IGNITION SYSTEM	1856	0	0	0	0	0
LUBRICATION SYSTEM	390	0	0	0	0	0
PERSONNEL	118	0	1	0	0	0
UNDETERMINED	47	1	1	1	0	0
TOTAL	3303	3	7	3	0	0

FIG. NO. 2

NON-AIR CARRIER OPERATIONS

STRUCTURE	1134	228	867	265	83	3
FUEL SYSTEM	919	503	907	752	84	6
IGNITION SYSTEM	186	98	135	97	12	1
LUBRICATION SYSTEM	67	27	56	31	3	2
PERSONNEL	136	80	121	84	6	3
UNDETERMINED	248	215	230	230	59	22
TOTAL	2658	1150	2416	1459	187	36

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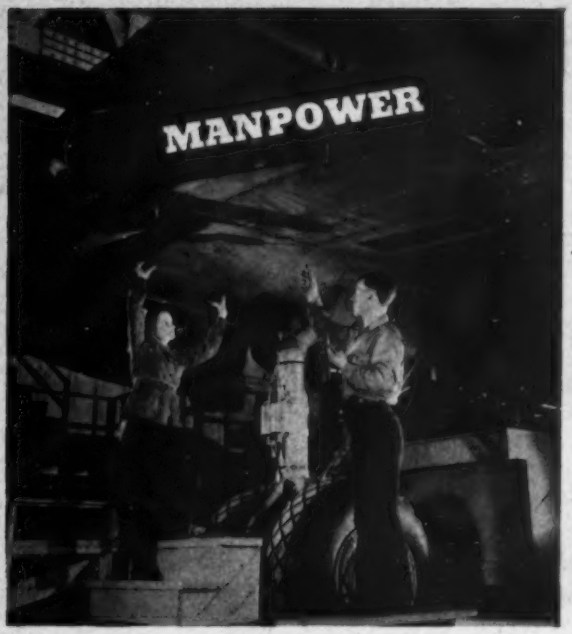

REYNOLDS SKILLED WORKMEN do your fabricating for you. All you need do is furnish blueprints or templates, Reynolds takes care of the rest. Finished formed parts arrive at your plant ready for assembly.

IF YOU DO YOUR OWN FABRICATING big areas like this are taken up by stock, machines and scrap. Take advantage of Reynolds modern prefabricated plane parts service and turn over that valuable space to other work.

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- ***MANPOWER***
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Any production method that can save airplane manpower today certainly deserves serious consideration. Add to this the saving of plant space, transportation and scrap handling and you have a combination that's unequalled in speeding plane production.

Just such a method is Reynolds Prefabricated Plane Parts Service.

- It saves you manpower because you receive finished aluminum parts ready for immediate assembly.
- It saves plant space because you do not have to maintain excessive stock piles, do all your own fabricating or store and segregate your own scrap.
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- And it saves metal because the 30% of every aluminum sheet that normally becomes scrap during fabrication can be put back to work in our plants in a matter of days instead of months.

Reynolds was the *FIRST*. . .

The first aluminum manufacturer to supply finished plane parts from aluminum sheet 3 years ago, Reynolds is, today, supplying finished parts to every leading manufacturer of combat planes. In that time Reynolds has built up the organization needed to make such a plan smooth-running, accurate, practical.

This forward thinking and co-operative planning has pushed Reynolds ahead to where its operations now cover 40 plants in 14 states, with its own source of Bauxite from which aluminum is made. This urge to "go places" is what keeps Reynolds men on a continual search for new ways to make aluminum better . . . make it easier and cheaper to use.

Take advantage of Reynolds' resources, equipment and engineering skill. For any problem you may have in working with aluminum, no matter what it may be, you'll find Reynolds able to handle it in the most practical way. Reynolds Metals Company, Aluminum Division, Louisville, Ky.

ALUMINUM

REYNOLDS METAL

This Jacobs engine is no war baby, hot-house developed at high speed, with cost no object . . . no military matériel headed for future scrap heaps when the show is over!

The Jacobs was born in the twenties, built for pilots who paid for their own engines out of perilous prize money and hard-earned charter hours . . . developed through the Depression years when aviation was in the poorhouse . . . a bread and butter job for ships that had no spares . . . an orphan child on upkeep, but a hog for performance and payload.

When the war broke, the Jacobs was a sure thing in its power class, proven in performance, ripe for quantity production, and ready for the tough job of toting twin-engine trainers that turn hot pilots into Big Operators.

Jacobs engines take more take-offs and more full throttle time than the big radials on combat ships, stand up under student handling, diverse terrain and varied climate . . . and today deliver more than a thousand hours of service between major overhauls — performance that is *three times* the original prescription!

FOR worry-free, dependable delivery of packaged power at low cost, Jacobs had a lot to offer the war effort . . . will have even more for peacetime aviation and industry. Remember the name . . . Proof on request. Inquiries invited . . . Jacobs Aircraft Engine Co., Pottstown, Pa.

JACOBS • **Pottstown, Pa.**

1st Mexican Application For U. S. Routes Filed

THE FIRST APPLICATION from a Mexican airline seeking air routes in the United States was filed last fortnight with the Docket Section of the Civil Aeronautics Board by Aero Transportes, S. A.

The carrier requests a permit to operate a line from Piedras Negras, Coahuila to San Antonio, via Eagle Pass. Manuael Reachi, president, stated his company has seven planes and operates over 2,000 miles of routes, including a transcontinental. Reachi stated the application had the support of the Mexican government.

Eleven other applications for new or amended routes were filed during the period from March 25 to April 8. A brief summary of the applications follows:

Aero Transportes

Aero Transportes, S. A., filed for a line from Piedras Negras, Coahuila, to San Antonio, via Eagle Pass, to carry passengers, mail and express. (Docket 1354)

Fish Airlines Corp.

This company with offices in the Masonic Building, New Bedford, Mass., filed for a certificate to engage in air transport of general freight, including all forms of sea products, between Boston, New Bedford and other New England points on the one hand and a score of cities in mid-central and southern states on the other hand. The applicant requests permission to transport property and freight from these destination points back to Philadelphia, Boston, New Bedford and Portland. Charles J. McGowan, of New Bedford, is president, treasurer and director of the company which has been engaged in the freight business under the name of Fish Transport Co. Inc. (Docket 1359)

Hogan Flying Service

This company, operated by Everett V. Hogan, of Scottsbluff, Neb., filed for a route between Casper, Wyo., and North Platte, Neb. via Douglas, Lusk and Torrington, Wyo., and Scottsbluff, Alliance, Oshkosh in Nebraska. Applicant proposes to carry mail, passengers and property. (Docket 1353)

Metropolitan Airways, Inc.

This company of Manhattan, New York City, filed for air transport of passengers by helicopters between three undisclosed terminals in Manhattan to LaGuardia airport, Idlewild, White Plains, Yonkers, Hemstead, Port Chester, New Rochelle, Stamford, Jersey City and Newark. (Docket 1348)

Mountain States Aviation, Inc.

Applicant through Ford E. Williams, executive vice president, 3800 Dahlia St., Denver (16) Col. filed for a circular route, originating and terminating in Denver, for air transport of property and mail. The following points would be served: Idaho Springs, Breckenridge, Climax, Leadville, Redcliff, Gilman, Eagle, Aspen, Crested Butte, Paonia, Ouray, Telluride, Rico, Silverton, Creede, DelNorte, Center, Saguache, Westcliffe, Florence, Cripple Creek and Castle Rock. Applicant proposes to use conventional aircraft. The company is now operating a primary and advanced flying school for the Army and owns hangar and airport equipment at both Denver and Boulder. (Docket 1357)

Jack Neal & Son

Applicants of 453 South Main St., San Antonio, Tex., filed for air transport of passengers, mail and property in a local and feeder airline service over four routes totaling 2,066 miles as follows: a circular route originating and terminating in San Antonio, via Houston, Corpus Christi, Laredo and other intermediate points, between Brownsville and Del Rio, via Laredo and Rio Grande; between San Antonio and San Antonio, via Columbus and Houston and between San Antonia and Van Horn, via Sonora, Del Rio, Van Horn and El Paso. (Docket 1344)

Norseman Air Transport, Inc.

This company of 78 Farmington Avenue, Longmeadow (6) Mass. filed for a number of air transport routes in the New England states. The company proposes to use conventional type aircraft over all of the routes with the exception of one where the helicopter would be operated. Applicant proposes to carry mail, passengers, express and property in pick-up and flag stop operations. (Docket 1356) In another application filed by this company, four routes are asked to Canada as follows: Newport to Montreal, Newport to Three Rivers, Newport to Chicoutimi and Presque Island to Quebec, via Moncton. (Docket 1355)

Prairie Airways, Inc.

Applicant of Alliance, Alaska, filed for an air transport route between Miami, Fla. and Nome, Alaska via Kansas City, Edmonton, Whitehorse and Fairbanks and scores of other cities. The main route would have three off-shoot segments—one between Kansas City and St. Louis, another between Sheridan, Wyo., and Chicago and a third between Casper, Wyo., Portland, Seattle and back to the main line of Great Falls. The applicant asks a certificate to transport passengers, mail and property with conventional aircraft. Christopher J. Abbott, of Hyannis, Neb., is president of the company. (Docket 1347)

CAB Calendar

Apr. 18—Hearing on application of All American Aviation, Inc. for stop at Athens, Ohio. (Docket 1327).

Apr. 27—Prehearing conference on applications involving local and feeder service on the West Coast. (Docket 250 et al)

May 1—Hearing on applications of American, Eastern, Colonial, PCA, UAL, Page Airways, Inc., Union Airways, Inc., Hylan Flying Service, Inc., for routes between Washington, D. C. and Canada. (Docket 609 et al).

May 1—Prehearing conference on applications of Hawaiian, TWA, Matson Navigation Co. and Northwest for routes from Los Angeles, San Diego, San Francisco, Portland, Seattle to Honolulu. (Docket 861 et al).

May 1—Hearing on application of Pan American Airways, Inc. for Board approval of its control of Aeronaves de Mexico, S. A. (Tentative).

May 11—Prehearing conference on applications involving service in the Rocky Mountain states. (Docket 152 et al).

June 12—Hearing on applications of Eastern, Delta, PCA, State Airlines, Air Transport Corporation, American, Carolina Scenic Coach Lines, South East, Virginia Central, National, Seaboard, Colonial in Great Lakes-Florida cases. (Docket 570 et al).

Bill Would Allow CAB To Grant Temporary Lines Without Hearing

Rep. Francis Case (R., S. D.) has introduced a bill in the House permitting the Civil Aeronautics Board to grant temporary air route certificates without hearing. Certificates would be valid for not more than 180 days and would give the carriers no permanent rights.

Rep. Case stated that such routes "would serve a useful purpose" in areas where there is a real need for air service. The routes should also prove useful to CAB by giving it a background of feeder line experience, he said, adding that certificates would not be granted for mail unless there was a reasonable possibility that compensation to the carrier would be less than postal receipts.

Producers Air Lines, Inc.

This company of 1301 Elm Street, Toledo, filed for routes between many points in Central American and the Caribbean area, to Illinois, Indiana, Iowa, Ohio, Michigan, Wisconsin, Missouri, Pennsylvania, Minnesota, New York, Canada and Alaska for transport of raw, cooked and processed foods, fish, berries, fruits, vegetables, drugs and medicines. The applicant, proposes to use conventional airplanes, gliders and helicopters. (Docket 1352)

Service Stages, Inc.

Jack Berman, president of this company located at 768 Bankhead Avenue, N. W., Atlanta, Ga., filed an application for a certificate to transport by air persons, mail, baggage and light express over four routes, between Atlantic and Piedmont, Ala. and beyond Piedmont and Gadsden and beyond Piedmont and Anniston. (Docket 1358)

The Cincinnati Newport and Covington Railway Co.

This railroad company of 3d and Court Sts., Covington, Ky., filed for four air transport routes for carriage of persons, mail, baggage, express, newspapers and property between Carrollton and Maysville, between Frankfort and Somerset, between Louisville and Ashland and between Louisville and Bowling Green, all by various intermediate points. Total mileage is 1,185. The company, of which P. G. Vonderamith is vice president and general manager, proposes to use twin-engine planes of 8 to 10-passenger capacity. Company and its predecessors have been engaged in common carrier operations for 75 years. (Docket 1350)

Yellow Cab of Philadelphia

This taxi company of 1505 Race Street, Philadelphia, filed for three types of air transport service in the Philadelphia-Camden metropolitan area. The company proposes to operate an aircraft taxicab service, a chartered service in Pennsylvania and New Jersey and scheduled service between Philadelphia and Allentown, via seven cities; between Philadelphia and Atlantic City and between Philadelphia and York, via intermediate points. Applicant proposes to use helicopters. (Docket 1349)

Examiner Questions Alaska Airlines' Financial Condition

A recommendation that the Civil Aeronautics Board deny the application of Alaska Airlines, Inc., for Board approval of its acquisition of Cordova Air Service because of the applicant's financial condition was made recently by CAB Examiner Lawrence J. Kosters.

Under the terms of the purchase agreement, Alaska Airlines agreed to pay $30,000 for the physical property and operating rights of Cordova, a company whose fixed physical property has a net book value of $14,922. While the examiner found that the present market values might balance this disparity, it is because of the effect of this proposed acquisition on the company's already strained financial condition and the further effect of this merger on other Alaskan carriers that he decided the transaction is not in the public interest.

The Airlines' balance sheet as of Oct. 31, 1943, shows that it had available for running expenses cash on hand and in the banks amounting to $19,438 and a payroll accrual of $18,435. Payroll requirements of the company are about $40,000 a month and Kosters' report asserts that the carrier has had to periodically borrow money from Anchorage banks at 8% interest to meet running expenses. He listed the company's bank obligations as $61,500 and outstanding long term loans from stockholders at $211,000 including the $20,000 placed in escrow to pay Cordova. On Oct. 31, 1943, the accrued interest amounted to $10,340. Current liabilities totaled $185,000 and it had owing it for services rendered $206,500, about half of which was due from the Federal government, the report stated.

Alaska Airlines has contracts covering the purchase of Mirow, Lavery, Pollack, Airmotive, a Lodestar plane and is obligated to pay approximately $6,000 a month. This amount is payable monthly for about two years when some of the contracts will be paid in full. During the past four years Airlines has experienced a net loss of $19,332 from operations, and unless a profit is realized in the future it will be necessary for the company to resort to further borrowing to meet the monthly payments or adopt some other form of financing, Kosters states.

In addition to the carrier's unfavorable financial condition, Kosters report states that acquisition of Cordova would give the company a virtual monopoly on air transport in the interior of Alaska which he feels is not to the best interests of the territory's future in aviation nor consonant with Congressional intent as expressed in the Civil Aeronautics Act.

Panagra Converts DC-3A For All-Cargo Operations

One of the three new Douglas DC-3A airplanes recently allotted to Pan American-Grace Airways has been converted for all-cargo operations over the company's trunk line between Balboa and Buenos Aires.

18 YEARS AGO THIS MONTH

Little man, you had a busy day...

You couldn't see over the crowd... and you didn't quite understand what the excitement was all about. But, gosh, some of the grown-ups towering around you didn't either.

The big shirt-sleeved man they called "Pop" Hanshue did. So did the tall fellow in flying suit and goggles named Kelly. They were starting an airline... Western Air Express... to fly the mail between Los Angeles and Salt Lake City... and someday passengers!

Sure, "Pop" Hanshue knew what it meant. For it was only two years later (you hadn't even started to school yet) when he was operating big 3-engined planes between Los Angeles and San Francisco, with 12 soft chairs in a cabin big enough to walk around inside... meals in the sky... and limousines to the airport. They called this the "Million Dollar Airway."

Today they're all "million dollar airways," thanks to men in the aviation industry everlastingly figuring how to build better planes to fly faster and carry bigger payloads. Right now these men are helping to win a war but after that you'll see wonderful new planes, offering still faster service at lower costs.

And you'll see, too, that the men who run Western Air Lines *never* stop figuring better and cheaper ways to carry passengers and cargo. They'll always be PIONEERS.

General Traffic Offices: 510 West 6th Street, Los Angeles 14, California

Western Air Lines

America's Pioneer Airline

"Ship it on the ten o'clock plane"

As THE development of the American railroad and the American automobile each successively brought this country a new era of transportation and commercial advantage, so will American Aviation bring a quicker tempo in transportation and trade development the nation over.

The outlook for trade expansion alone, through aviation freight and express service between major markets and thousands of smaller towns and cities is the bright, engaging promise to American commerce.

When this new air age arrives and the popular demand of intermediate American communities is an equalized measure of aviation service, their needs will best be satisfied by organizations like AVIATION ENTERPRISES LTD., whose officers and executives possess combined and successful aviation and transportation operating experience.

Aviation Enterprises Ltd.

CONTRACTORS TO THE U. S. ARMY AIR FORCES

MUNICIPAL AIRPORT
HOUSTON

AVENGER FIELD
SWEETWATER

3 Applicants in Seaboard Case Asks Reconsideration

THE CIVIL AERONAUTICS Board had under consideration as this issue went to press the petitions of three of the four unsuccessful applicants in the Seaboard route case requesting a re-argument and reconsideration of its decision whereby National Airlines, Inc. was given a route from Jacksonville to New York, via various intermediate points.

Those petitioning for reconsideration are: Eastern Air Lines, Inc., Colonial Airlines, Inc., and Seaboard Airways, Inc.

E. Smythe Gambrell, counsel for Eastern, cautions the Board "against adopting a program of arbitrarily building up small airlines regardless of public need for service, and perhaps, of authorizing new small airlines which will later clamor for new route mileage." He offers this suggestion after reviewing National's financial history wherein he concludes: "It may be noted that an investor who has already expanded $21,000 into more than two and a quarter millions is not entitled to great sympathy from the Board." Gambrell points out that the Board, in an opinion handed down in 1939, fixing National's mail pay, stated that National began operations with total assets of $15,800.

"When the company was incorporated in 1937, the sole owner transferred to the corporation assets having a book value of $21,022 in exchange for 160,000 shares of stock," Eastern's petition states. "As the Board has noted, he thus acquired the stock at a price of about 13c a share, despite the fact that the company's stock was never offered to the public at less than $2.50 per share, or about 2,000% in excess of the price paid by the original stockholder.

Sells 50,000 Shares

"Since that time, according to records on file with the Board, it appears that the principal stockholder has sold over 50,000 of his shares. According to information issued in 1943 by Merrill Lynch, Pierce, Fenner & Beane, National's stock ranged in price between approximately $3 per share and $10 per share throughout 1939 to 1942.

"Assuming that the principal stockholder sold those 50,000 (of his 160,000) shares at an average price of only $5 per share, it appears that he has already realized a cash profit of nearly a quarter million dollars on less than 1/3 of his original investment of $21,000.

"As National's stock is now selling in the neighborhood of $20 per share, it seems that the stock still held by the principal stockholder is now worth over two million dollars," the petition stated.

Eastern states that the foregoing figures are not given as being representative of speculative profits made in the airline industry. It is doubtful, Eastern states, whether any other investor has reaped such a profit as the one described.

Seaboard in its petition claims the order of the Board, in so far as it relates to the routes between New York and Miami, is plainly invalid because the order and opinion contain no adequate findings of fact. "This" the petition states, "is a clear violation of the Act."

"The CAB Act requires that the Board make findings of fact and disclose the basis for its decision. It is a plain essential due process, as distinguished from a star chamber process, that the litigant and the public be told what fact findings have been made and why," it is stated. "If the Board gives National the Jacksonville-New York franchise, it should also give Seaboard the New York-Washington-Miami franchise and the New York-New Orleans franchise for there is a need for and abundant traffic to sustain such a service," it is claimed.

Seaboard's petition was filed by Leslie Craven and Edward Bierma, counsel.

Colonial, through its counsel, Alexander C. Dick, pointed out that against its wishes and over its protests, the Board included Colonial's application for a route between New York City and Nassau, via Atlantic City, Norfolk, Elizabeth City, New Bern, Wilmington, Georgetown, Myrtle Beach, and Charleston in a consolidated proceeding, the Seaboard case. Then after Colonial had put in its case at the hearing, based on local domestic service involved in its application, the Board, in its recent order, consolidated Colonial's application with the Latin America-Caribbean proceeding, where under the terms of President Roosevelt's letter of Sept. 7, 1943, only through service, between points in this country and points in the Caribbean area, may be considered.

The petitioner stated: "The record in Docket 445 (Seaboard case) built up with great expenditure of time and money by petitioner could not be used in Docket 525 et al (Latin America-Caribbean case) since only five of the 23 parties presently in the case were also parties in the Seaboard case.

"The Board has no right legally or constitutionally to deprive petitioner of the benefit of the record which has been duly made in the public hearing already held herein," the petition states.

Panair do Brasil's Small Fleet Shows High '43 Utilization

Although it possessed only 28% of the commercial airplanes owned by local Brazilian airlines, Panair do Brasil during 1943 flew 52% of the miles flown weekly by these companies, according to statistics from a report of Dr. Paulo Sampaio, Panair president.

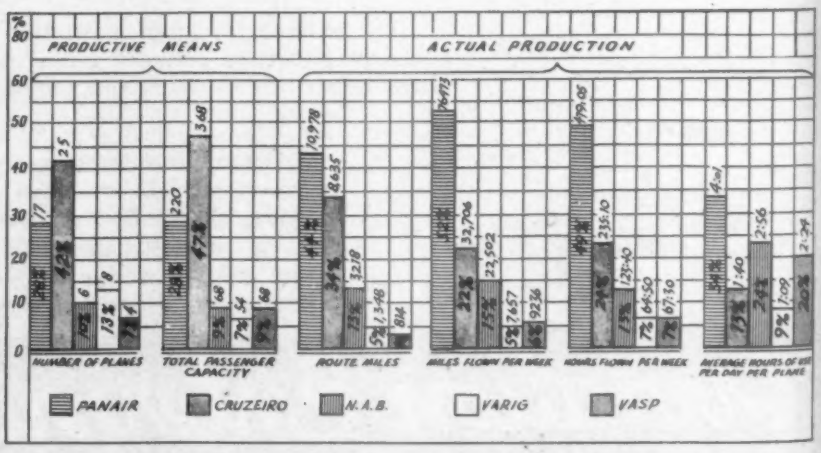
Panair, Brazilian affiliate of Pan American Airways, also led four other operators in route miles operated, hours flown per week and average hours of use per day per plane. The four other operators were Servicos Aereos Cruzeiro do Sul (CRUZEIRO), Navegacion Aerea Brasileira (NAB), Viacao Aerea Sao Paulo (VASP), and Viacao Aerea Rio Grandense (VARIG).

Panair used its planes an average of 4:01 hours daily per plane. In connection with this figure it is pointed out that the use of six of the company's planes (the Amazon fleet) is controlled almost entirely by scheduled operations that cannot be increased because of contractual obligations to a certain extent, and to the lack of traffic.

During 1943, Panair transported 859,621 pounds of express, compared with 493,616 in 1942, an increase of 74%. Mail carried totaled 404,260 pounds, against 231,028 in 1942, a 75% increase. Excess baggage carried was up 39% from 94,930 pounds in 1942 to 131,668 in 1943.

The only Brazilian airline which was able to get new equipment in 1943 was CRUZEIRO, which added four DC-3A's, received as a result of an old contract which was made under special conditions existing at that time in Brazil.

The following chart compares the 1943 operations of Panair with four other Brazilian airlines:



[1] Figures regarding route mileage shown in this chart follows the practice adopted by the C.A.A., i.e. no duplication of route mileage has been considered.

[2] As regards Panair, chart does not reflect a true picture due to the fact that the two Fairchilds, one of which is out of commission, cannot be flown save for emergency purposes in view of their characteristics not meeting Amazon contractual obligations.

[3] Aerovias Brasil is not included in the chart because this carrier has no regular schedules approved by the Brazilian Department of Civil Aeronautics as its present operations are confined to freight service between Brazil and the U. S., handled with one single plane.

For over half a century the history of Canadian Pacific has been one of progress and development. First came the railway, spanning Canada . . . and great ships plying the broad Pacific . . . to China . . . the Orient . . . Australasia . . . then other ships on the Atlantic linking Europe and North America by the short northern route.

Now, this world-girdling travel system has wings! Dedicated today to speeding aerial war traffic, training air force personnel and servicing R.C.A.F. planes - - Canadian Pacific Air Lines will be ready to serve peace-time needs when victory is won.

ROUTES FLOWN by C.P.A.

MONTREAL - QUEBEC - SAGUENAY
NORTHERN QUEBEC - LABRADOR
NORTHWESTERN ONTARIO
THE PRAIRIE PROVINCES
BRITISH COLUMBIA
YUKON and N.W. TERRITORIES
VANCOUVER - VICTORIA

Canadian Pacific
AIR LINES

HEAD OFFICE MONTREAL

CAB Report Favors Federal Agency on Aero Insurance

A HIGHLY INFORMATIVE report on Aviation Insurance, which suggests that the Federal government set up a single agency for the collection and dissemination of information on insurance companies and insurance rates affecting all phases of aviation, was issued March 28 by the Civil Aeronautics Board.

Pointing out that its investigation has not been exhaustive, due largely to its inability to compel insurance firms to disclose information and for the further reason that there is no central agency from which the information might be obtained, the Board stated its findings do not permit any final conclusions as to whether the functioning of the aviation insurance market has been consistent with the public interest in the development of aviation.

With reference to premium rates, the experience during the periods examined revealed a high rate of profit, but there were factors which, when taken into account, made a final judgment impossible at this time, the report stated. The report revealed that for the two review periods examined, profits amounted to 25.4% of premiums for airline insurance alone and 25.9% of premiums when all classifications of aviation insurance are considered.

"It is believed that continued observation of the aviation insurance market is in order to ascertain whether that market is adjusting its rates as rapidly and as fully as is reasonably possible in relation to the progress made in the reduction of aviation hazards, and is otherwise accommodating itself to the development of aviation . . . such observation can best be accomplished by providing for the power to obtain periodic reports of appropriate data disclosing the underwriting results of the American aviation insurance market," the report stated.

Study Asked by House Group

The Board undertook the study at the instigation of a Select Committee to Investigate Air Accidents of the House of Representatives. Paul J. McInar, examiner of the Rating Bureau of the New York State Insurance Department and Dr. S. S. Huebner, Professor of Insurance, University of Pennsylvania, assisted in the investigation.

In addition to the legislative proposals affecting more particularly the experience in casualty losses, the Board's interest in aviation insurance was also concerned with the reasonableness of the air carrier's expenses because of its effect on the need for mail pay or possibly higher passenger and property rates.

"The importance of insurance costs in commercial air transportation is evidenced by the fact that this expense for the year 1942 exceeded $2,850,000 for all domestic airlines, and ranged for the various air carriers from 2.2 to 6.9% of total operating expenses," the report stated. "Complaints have been made from time to time that airline insurance costs are too high, that the present market for airline insurance is too restricted and that other undesirable practices exist in this market."

The report stated the data which have been collected on a voluntary basis, leave much to be desired because much of the pertinent information was given the Board only on condition that it be held in confidence. This restriction, the report stated, made it difficult to discuss adequately some of the complex problems involved in the present aviation insurance market.

Three insurance groups presently dominate the American aviation market. During 1942, CAB said, over 96% of the insurance reported to the New York State Insurance Department including not only insurance for scheduled airlines, but also private flying and all other aviation risks was written by three underwriting groups, Aero Insurance Underwriters, Associated Aviation Underwriters and United States Aviation Underwriters, Inc., The remainder of the business reported for this period was written by the Employers Insurance Group and the Mutual Aircraft Conference. Under the group plan, any given risk is spread among a number of companies. This plan came out of the unfortunate financial experience of several insurance companies during the 20's when some high losses were sustained.

While giving full credit to the insurance companies for reductions which have been made, amounting to as high as 25.6% in one year, and 13.9% in 1942, the report raises the question whether reductions have been made to the fullest extent possible, consistent with good business practice. The absence of long standing actuarial records, the danger of almost total loss through a series of accidents, are mentioned as explaining the efforts of the underwriters to protect themselves against such hazards—a decision which the report states undoubtedly was a factor in the high profits earned by them. "In relation to airline risks, such a generous margin of profit from airline accounts over a span of eight years, despite the rate reductions effected, suggests that the underwriting groups have regularly tended to fix rates at too high a level," the report declared.

Profit-Sharing Plan Discussed

Steps which have been suggested by some of the insurance groups whereby airlines would participate in a modified profit-sharing or retrospective rating plans based on a favorable loss experience are touched upon. If such a plan had been in effect during the period from 1934 to 1941, between one and two million dollars, depending upon the amount of brokerage commissions, would have been returned to the airlines by the underwriting groups as excessive profits," the report stated.

The report also gives considerable attention to the inherent evils of American companies reinsuring their risks in foreign insurance companies. One of the tables in the report shows that the percentage of premiums for reinsurance with foreign insurers has averaged 48.1% of the total premiums of the three groups during the five year period 1938 to 1942. These companies paid $20,911,131 in premiums for reinsurance abroad during the period while at the same time these groups reported only $6,471 of reinsurance flowing to them from foreign sources.

Because insurance companies become the depositories of detailed information concerning the flow of foreign commerce and many other aspects of the economic life of the nation, and further because of other more or less confidential information which might fall in the hands of a hostile foreign power, the report raises the question of national security involved in these practices. The report points to action taken by other countries to avoid a similar condition with reference to making themselves independent of all other nations as to Marine insurance.

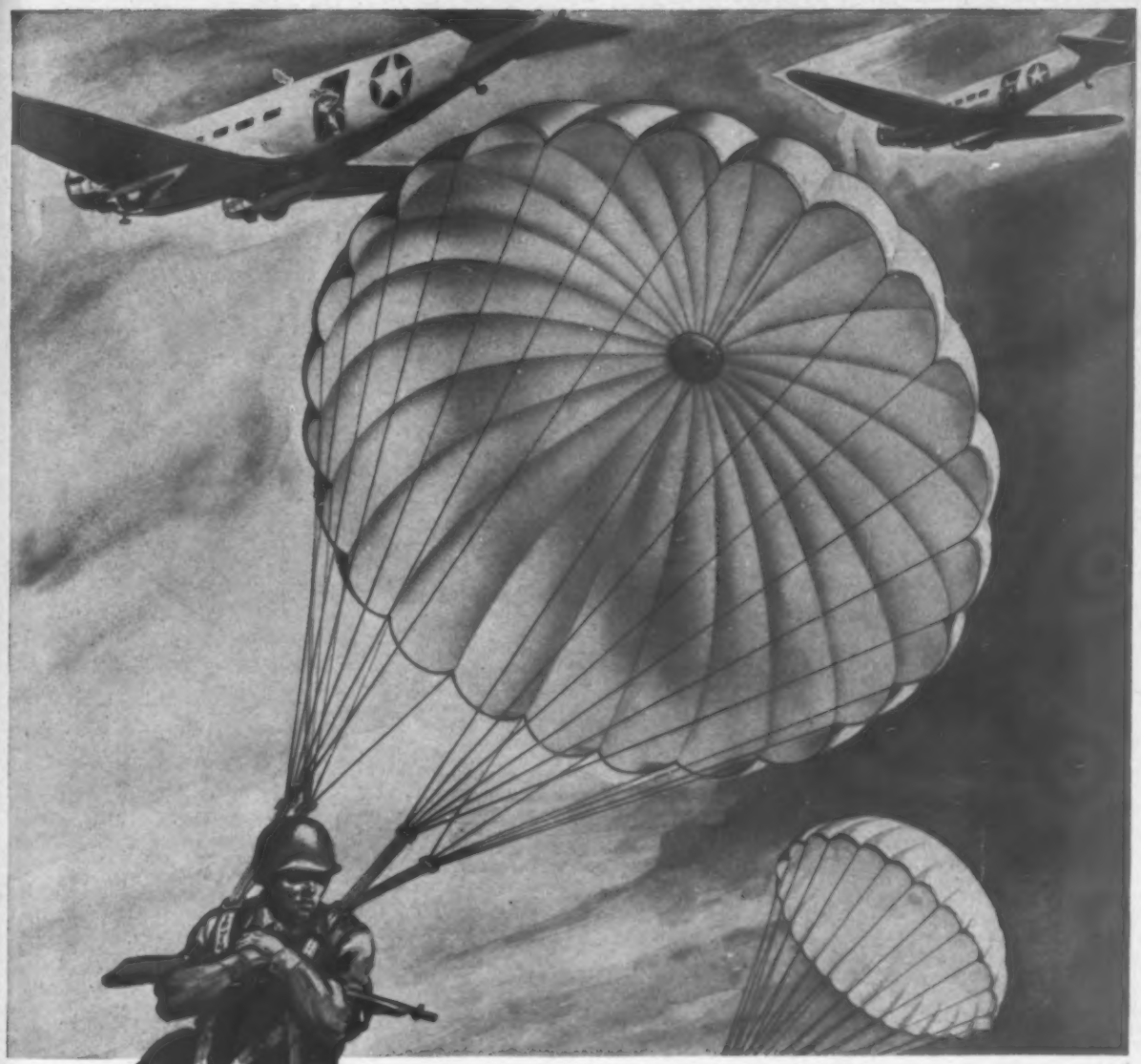
The report states that not only are there substantial insurance resources in both stock and mutual companies which are not now participating in the direct underwriting of aviation insurance, but almost no use is being made of American insurance resources for purposes of reinsurance on aviation risks.

Hawaiian Airlines' President

Stanley C. Kennedy, president and general manager of Hawaiian Airlines, Ltd., of Honolulu, which last year carried 4,598,456 pounds of cargo, 941,731 pounds of express, and 108,114 passengers. Three Sikorsky two-engined amphibians are used exclusively for freight operations, with DC-3s for passenger service on the airline's all over-water routes linking the major islands of the territory.

AIU Appointments

The appointment of Jerome Lederer as assistant manager, Fred N. Davey as assistant manager in charge of production, and Donald M. Stewart as assistant manager in charge of underwriting is announced by Aero Insurance Underwriters.



On to *His* job for Victory—Are you doing *all* you can to back *Him* up?

The name "IRVIN" on the harness means the chute is produced in an Irvin Factory with over 23 years' experience and skill in chute-making. Literature can be had by school or training executives for the asking. Address Main Office, Buffalo, N. Y.

THE CATERPILLAR CLUB: Founded in 1920. There is only one qualification for a life membership—in an emergency men and women who have saved their lives with parachutes. The word CATERPILLAR and representation of a caterpillar are registered trade-mark features of Irving Air Chute Co., Inc. We are anxious that the Club Register be kept complete and members upon enrollment will receive a gold caterpillar pin with the name inscribed thereon. Communicate with Main Office.

IRVIN Air Chute
THE LIFE PRESERVER OF THE AIR

IRVING AIR CHUTE CO., Inc.

1670 Jefferson Ave., BUFFALO 8, N. Y.

Factories at other points in United States, Canada and England... All Serving the United Nation's Air Forces

Airline Commentary

Innumerable persons have asked us during the past several weeks just exactly how many airplanes the domestic airlines have in service, how many they had a year ago, etc., etc. . . . So we decided to dig out the figures, and here they are, for your information . . . The *largest* number of planes that the airlines had in service immediately before the war was 324 . . . The *smallest* number—a year or so ago, following sales to the Army—was 166 . . . As of now, the number is officially 200 . . . However, it's really 197, because one plane is being completely overhauled and two have been loaned to Pan American Airways . . . The reason we give 324 as the largest number in service immediately before the war is that several years ago there were more than that number flying . . . They were, however, of smaller seating capacity . . . If you want to complicate the situation further, you can add to the present 200 seven Stinsons operated by All American Aviation, the air mail pick-up operator . . . They're not included . . . Statistics are a funny thing . . . Some CAB reports, we understand, don't include AAA's planes in summaries but do include the traffic they carry as part of the domestic airline total . . . However, if you're asked for a quick summary of the domestic airline situation, we suggest you remember the figures 324, 166 and 200 . . . Then you can't be far wrong . . .

●

West Coast pilots and operations personnel are high in their praise of the Army Safety Board for recent results in cutting down flagrant airway violations by new Army pilots in the western states . . . Six months ago, the situation was desperate, with many airline pilots experiencing a buzzing of their planes by fast military craft . . . Our West Coast correspondent informs us that the Safety Board has placed reckless pilots in the walking army, resulting in a marked decline in violations . . . Previously, punishment had been to ship the pilots direct to combat—which was exactly what many of them wanted . . . Procedure now is quick and simple, it is said . . . It isn't even necessary to secure the offending plane's number . . . A transport pilot radios his flight superintendent when a violation occurs, giving time and location . . . The airline then communicates with the Air Transport Command or with the Navy at San Diego, if the violator is a Navy pilot . . . The military then contacts all bases within the vicinity of the violation and a systematic check of all planes in the air at the time brings forth the offender—plane number or not . .

●

A story of the year-end holiday season has been called to our attention . . . It's late, but still good . . . It seems that one of the airlines had a new caterer at one of its stops in the southwest . . . This caterer was most anxious to please the airline and its passengers, so for his first holiday eve meal he not only outdid himself on special fare, but turned up at the airport with containers of Manhattan and Martini cocktails already mixed, as a special gesture in keeping with the season . . . In this day of liquor shortages, it's just as well that the airline passengers weren't around to hear the caterer learn that liquor just isn't served on the airlines . . .

●

Pennsylvania-Central Airlines' annual report for 1943 is one of the most attractive jobs we've seen in some time . . . It even has a title—"The 7 Planes That Stayed Home" . . . Following this theme, the report explains the outstanding job done by seven airplanes, and how, with this handful of equipment, the company was able to make a profit of $279,733 . . . During the first seven months of 1943, PCA had only six planes, the seventh being added in August . . . Before the war it had 23 ships and was buying more . . .

●

Several airline men were in a hotel in a legally-dry state recently. . . . One of the boys decided to pull a gag, went outside, called a friend in the local Chamber of Commerce, and had him phone the airline colleagues in the hotel to tip them off that the state revenue officers were on their way to the hotel to pull a pinch for serving liquor in the room. . . . Believe it or not, the airline boys took the gag seriously, threw away the liquor, and one of them actually went out on the fire escape to avoid detection. . . . They'll be tagged with the revenooer story for a long, long time—and well they might. . . .

●

We hear that Charlie Short, manager of Tulsa Airport, has a gag to end all gags . . . No less a person that O. M. "Red" Mosier, vice president of American Airlines, fell for it . . . We won't give it away, Charlie, but don't try it on us! . . .

Eric Bramley.

Women in Air Transport

(This is the fourteenth of a series of articles on women who are doing an outstanding but little publicized job for the U. S. airlines.)

AMONG THE INVITATIONS to Eastern Air Transport's 1930 Atlanta dinner went a telegram to Mrs. Louise Howell Saunders, whose reputation for Southern cooking and handmade lace was already traditional. Probably to compare her cooking with the Piedmont Driving Club's, where the affair was being held, Mrs. Saunders accepted and appeared—and hasn't been able to get away since.

A month later, on Jan. 5, 1931, she boarded an Eastern Air Transport "Kingbird" with four other passengers and flew to Washington where the airline maintained an office and ground force of five people. This particular trip, Eastern says, brought the first woman into the traffic department of an established airline.

In 1931, when Mrs. Saunders came to Washington, Eastern Air Transport operated one round trip daily from New York to Atlanta and from New York to Jacksonville via intermediate points. Her responsibility consisted of satisfying as many Washington passengers as possible with accommodations, which included the cushioned soapbox kept on hand to provide an extra seat in the "Kingbirds."

By March, 1931, Mrs. Saunders had learned enough to inaugurate the first Reservations Control and put out the first reservations manual. Much of this same manual is incorporated in the present EAL reservations regulations. Next she worked out reservations problems in Richmond, later transferring to New York where she gave instruction to the local office and thereafter supervised the women personnel there (which EAL says were the first women reservations clerks) from her desk in Washington. At the end of a long day in Washington she frequently boarded a plane for New York for a night's work with New York personnel, returning to Washington by plane in the morning. "We didn't seem to go home in those days," she recalls, "because everything interesting was happening at the airport."

The Eastern Air Transport routes in-

KEEPING PACE....

THE story of America's wartime industrial accomplishments is one that will live long after victory has been won. Keeping pace in the production race to equip the battle forces of the United States has been a severe test for both men and machines, but wartime industry has answered the call to arms with the needed production. Globe Aircraft Corporation is proud to be among the group of American manufacturers which have made good on wartime assignments. Back of the twelve-month record of production just completed by Globe is a force of efficient workers who share the commendations the company has received from Government authorities for meeting or exceeding every monthly production quota.

GLOBE AIRCRAFT CORPORATION

Manufacturers of the AT-10 Advanced Trainer and The Swift GC-1

FORT WORTH, TEXAS, U. S. A.

★ ★ ★ ★ ★

creased and planes improved, and Washington's force gradually expanded from five to 40. Company administration changed four times and Eastern Air Transport became Eastern Air Lines, headed by Capt. Eddie Rickenbacker. Washington personnel was pushing the hundred mark, and daily passengers increased from 50 to a record 540. Mrs. Saunders became "Ma" Saunders all over the EAL system and throughout the airline industry. She also became assistant reservations supervisor at Washington.

Her picture (page 56) will enable many people with whom she maintains regular telephone contact to see her for the first time. Of her original contacts in Washington she still handles the travel affairs of about 200, and the number increases every year.

On Jan. 5, 1944, "Ma" Saunders' girls presented her with a cake and 13 candles. She reflects that it has been the shortest 13 years on record.

Canadian Pacific Had Loss of $263,000 In 1943, Report Reveals

An accumulated loss of $236,573 marked last year's operations of Canadian Pacific Air Lines, Ltd., the annual report of its parent company, Canadian Pacific Railway, disclosed last fortnight.

The report said in part:

"During the year further steps were taken by Canadian Pacific Air Lines, Ltd., in the development of a coordinated air transportation system. For the movement of essential personnel and cargo carried in connection with vital continental defense establishments in Northwestern and Northeastern Canada, additional modern aircraft were allocated to your Air Lines. To provide for the traffic referred to, extensive new radio communication installations were also required, as well as additions to ground equipment, shops and airport facilities. To finance these capital expenditures your Company advanced an amount of $2,027,000 during the year.

"While there was a substantial increase in the volume of traffic handled as compared with the previous year, expenses increased in greater degree, owing largely to the cost of operating and maintaining aircraft under existing wartime conditions. In addition, the cost of pilot training was heavy, and there were non-recurring charges for reorganization and development. The operations for the year resulted in a moderate loss, which, however, was not unreasonable in all the circumstances. Provision for the accumulated loss to the end of the year, amounting to $236,573, was made by a charge to Other Income.

"Detailed study has been made of the possibilities of further development of your Company's air activities, and a number of new routes and extensions of existing routes in the international as well as the domestic field will be proceeded with whenever this is permitted by Government policy."

Canadian Pacific Air Lines, Ltd., reports that its transports were flown 6,133,751 miles in revenue service during 1943, an increase of 17% over the previous year. Passenger miles totaled 24,031,000 an increase of 82%; mail pound miles were 926,994,000, increase of 91%; and freight pound miles 1,825,774,000, increase of 18%. The airlines, including training schools and overhaul plant, at the end of the year had approximately 9,500 employes.

American Airlines Nets $3,192,968 in '43

American Airlines, Inc., in its annual report for year ending Dec. 31, 1943, released to stockholders by A. N. Kemp, president, shows a net profit of $3,192,968 transferred to surplus, after provision of $1,750,000 for a transition reserve.

This compares with net profit of $3,851,714 in 1942 which included $834,845 from sale of flight equipment at direction of the government.

Earnings before provision for Federal income taxes and the reserve for transition to peacetime operations were $8,442,968 compared with $5,423,868 in 1942.

Under the Revenue Act of 1943, it is believed that the company is exempt from any excess profits tax for 1943. Provision of $3,500,000 was made for Federal income taxes as against $2,750,000 for 1942, of which $343,000 was applicable to the sale of flight equipment.

The net profit of 1943, after deduction for dividends paid on preferred, amounted to $5.18 a share on 574,848 shares of common stock outstanding, compared with $4.88 a share for 1942, after deduction in that year of the net profit arising from sale of flight equipment. Planes in operation were reduced from 79 to 43 during the year but were up to 47 at the end of 1943.

Financial position of the company is indicated by the corporate surplus of $9,354,653 at Dec. 31, 1943, as compared with $7,236,463 at end of 1942, Kemp pointed out.

Through the greater utilization of aircraft and an increase of the load factor it was possible to increase total operating revenue to $31,451,430, an increase of 16.6% over the 1942 revenues of $26,982,014.

Revenue passenger miles increased 8.4% and passenger revenue was up 8.6% in 1943. Air mail pound miles increased 79.2% in 1943, and the revenue was up 49.6%. Air express pound miles increased 63.1% and the revenue was up 50%. The load factor reached 88.2% of passenger seats available for occupancy and 85.4% of payload weight capacity a level impractical of attainment in a normal year. In comparison, 74.2% of available seats were sold in 1942; 69.4% in 1941; and 66.7% in 1940. The capacity of the limited number of planes available was inadequate to meet demands for all classes of traffic—passenger, air mail and air express.

Consolidated Balance Sheet, Dec. 31, 1943 shows assets of $33,476,516. Current assets were $27,959,117 including cash $9,362,959, U. S. Treasury bonds and certificates $3,994,966, U. S. Treasury Tax Notes $5,026,000, Canadian Gov't Bonds $90,900; accounts receivable, U. S. Gov't, less $2,291,608 advance payments received, $2,632,285, for air travel $1,306,705, air travel plan $767,652, other airline companies and agents $1,978,349, other trade accounts $588,883, indebtedness of employes $64,656 (less $154,002 reserve for doubtful accounts); inventories $781,298. Investments and special funds $575,673. Flight equipment (less $6,158,020 for obsolescence and depreciation) $1,368,545. Land, buildings and other equipment, less $2,078,684 for depreciation, $2,902,059. Non-operating property and equipment $26,320. Long term operating property prepayments, less amortization, $522,283. Deferred charges $122,517.

Current liabilities were $11,418,979 including accounts payable $1,689,179; other airlines traffic balances payable $2,030,012; air travel plan subscribers' deposits $2,702,716; preferred stock dividends $53,126; accrued salaries and wages, $689,162; provision for income taxes $3,545,442; other accrued taxes $349,100; other accrued liabilities $360,240. Unearned transportation revenue $104,403. Reserve for transition to peacetime operation $1,750,000. Capital stock prfrd. $5,100,000; common $5,748,480. Paid in surplus $1,942,682; earned surplus $7,411,970.

PCA Reports '43 Revenue of $4,041,419

In spite of curtailed operations, and loss of 14 to 15 of its planes to war transport during 1943, Pennsylvania-Central Airlines reports that revenue from passengers, mail, express and miscellaneous sources, amounted to $4,041,419 compared with $4,079,773 in 1942. Eighty per cent of this was derived from passenger revenues.

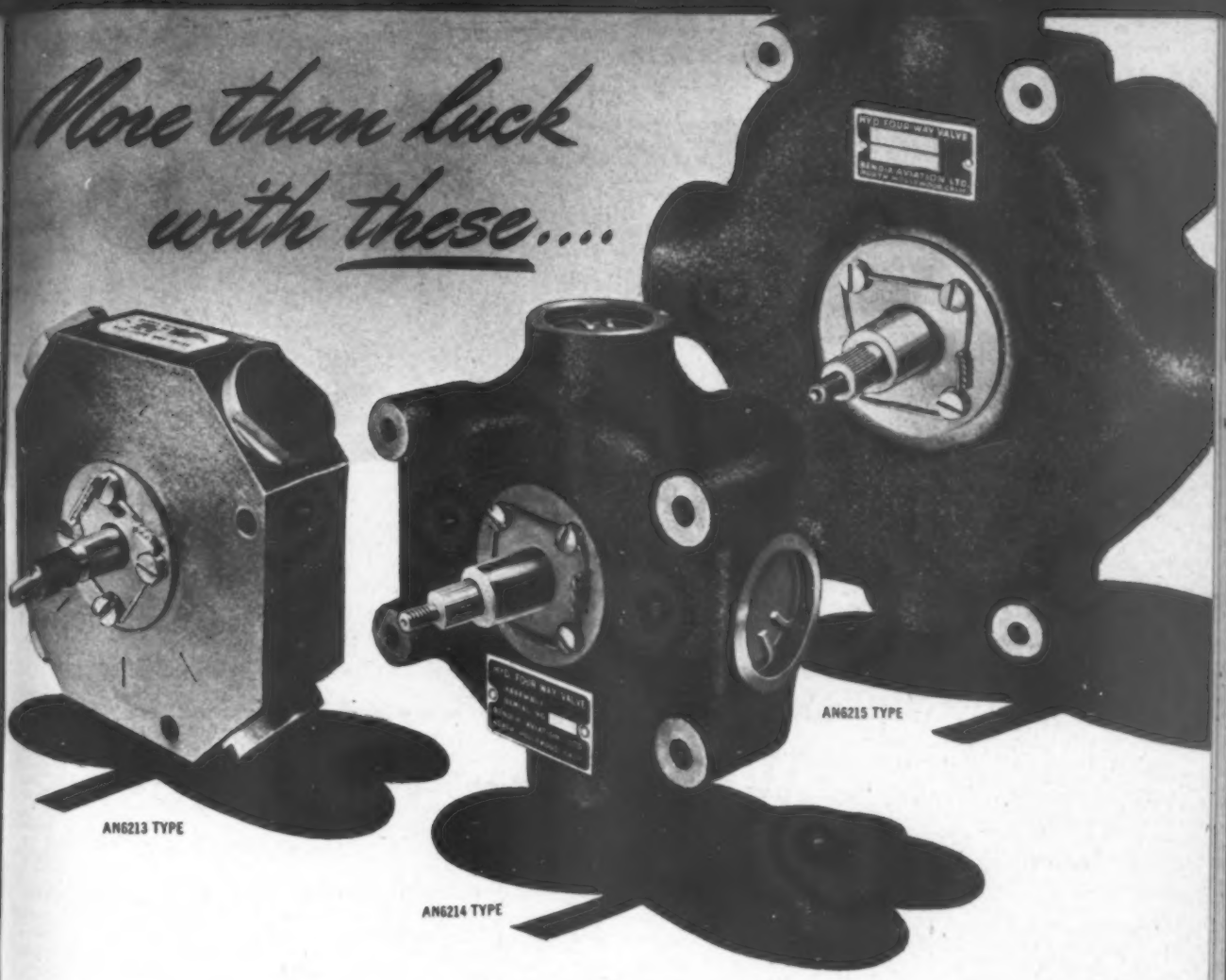
With only six planes during the first seven months of 1943 and seven during the last five months, full utilization of this limited equipment resulted in a net profit of $279,000. PCA's planes flew 16.9 passengers per revenue mile in 1943, as against 13.4 passengers per revenue mile in 1942. During the year, 4,358,000 pounds of express were carried, compared with 2,407,000, and 4,549,000 pounds of mail, representing a gain of 58%. The seven planes flew 52,312,000 passenger miles, approximating 95% of the 1942 total of 54,988,000 miles.

Operating expenses were $3,479,868 compared with $3,723,485 in 1942.

Balance Sheet, Dec. 31, 1943, showed assets of $5,036,656. Current assets were $3,624,276, including cash $1,287,665; receivables, traffic balances $256,154, Post Office Dept. $70,164, U. S. Gov't Depts. under service contracts, less $96,725 allowance for adjustments, $1,505,303, other receivables $113,265; inventories $391,725. Property and equipment, less $1,302,227 for depreciation, $1,302,073.

Current liabilities were $1,033,893 including traffic balances $314,827; accrued liabilities $330,816; provision for taxes $285,984; deposits on air travel card accounts $102,266. Capital stock prffd. $1,435,325, common $359,634; capital surplus $1,568,065; earned surplus $639,739.

More than luck with these....



Four-Leaf Clovers

These Altair* Four-Way Selector Valves are often spoken of as "four-leaf clovers."

It was no lucky coincidence, however, that determined the characteristic shape of these AN valves. Their radial design was deliberately planned to achieve –

Least cubic volume and weight per square inch of port area.

Lowest pressure drop because fluid path is shortest.

Greatest simplicity to speed volume manufacture.

In addition, only these selector valves incorporate the proven Altair Plastic Poppets.† This combination of advantages has earned for Altair valves their record of performance and easy maintenance under the toughest jobs of war. Complete data on Altair Selector Valves – 1/4 to 3/4 tube size in single, dual or triple banks – will be sent to air frame engineering personnel on request. Pacific Division, Bendix Aviation Corporation, North Hollywood. Sales Engineering offices in St. Louis, Dayton and New York.

**The new trade name of Pacific Division, Bendix Aviation Corp.*

†Patents Pending

Altair Four-Way Valves now are being supplied on 24 different types of military aircraft, controlling virtually every function of hydraulic operation.

Pacific Division
Bendix Aviation Corporation
(Formerly Bendix Aviation Ltd.)
NORTH HOLLYWOOD, CALIF.

Bendix Aviation Corporation — DESIGNERS AND MANUFACTURERS OF RADIO AND HYDRAULIC EQUIPMENT — OUR PART OF THE INVISIBLE CREW

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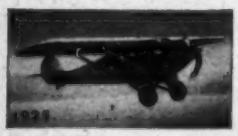
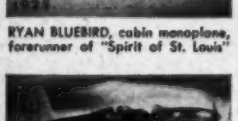
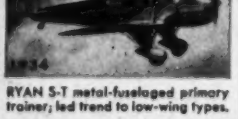
RYAN-STANDARD cabin plane; pioneer passenger airliner.



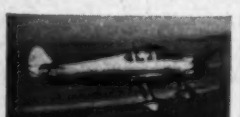
RYAN BLUEBIRD, cabin monoplane, forerunner of "Spirit of St. Louis"



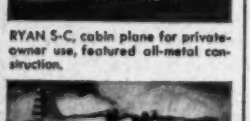
RYAN S-T metal-fuselaged primary trainer; led trend to low-wing types.



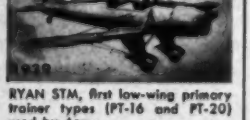
RYAN S-C, cabin plane for private-owner use, featured all-metal construction.



RYAN STM, first low-wing primary trainer types (PT-16 and PT-20) used by Army.



RYAN STM-S2 seaplane, exported for training Naval pilots.



RYAN PT-25, superbly engineered plastic-bonded plywood trainer.

Why *Ryan* Manifolds

ON SO MANY FAMOUS PLANES?

Back of Ryan's long position of leadership in the engineering and production of exhaust manifold systems is a different way of working—

A golf champion knows that how he hits the ball is mostly a matter of the "back swing" and the "follow thru".

Similarly, Ryan's enviable reputation for "hitting the ball" has resulted from a policy of encouraging design and engineering consultation *before* production and by following through *after* production with expert assistance on service problems and prompt and adequate parts supply.

Time and again it has been proven that Ryan can save its customers' money, weight and precious engineering time if Ryan engineers are called in for consultation with the customers' power plant experts and given the manifold design assignment when the original airplane design is being laid out. And besides these *savings* are the extra *benefits* of better performance and service characteristics.

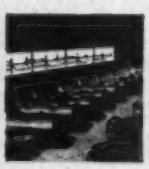
Ryan engineering and production experts have demonstrated their leadership in the specialized field of manifold design and manufacture. Evidence of this is that Ryan technicians are responsible for what designers consider important development in manifold design in the past 15 years—the patented Ryan "ball and socket" universal joint, an essential to most modern power plant installations.

These are typical of the reasons why Ryan manifolds and other exhaust system applications are standard equipment on so many of America's most successful military and commercial planes.

If you have an exhaust systems problem we invite you to let Ryan apply its "know how" to it *in the designing stage.*

RYAN

Rely on Ryan to Build Well



RYAN BUILDS WELL

Ryan construction, proven in aviation's pioneer days, now proven in war, will tomorrow produce safer, more useful peacetime aircraft.

RYAN TRAINS WELL

Ryan School of Aeronautics, famous peacetime air school, now training fine U.S. Army pilots, follows one creed: Thoroughness.

RYAN PLANS WELL

Modern engineering + flying experience. Typical result: Ryan exhaust manifold systems are now used on the finest planes of other manufacturers.

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Ryan Products: Army PT-22s; Navy NR-1s; Army PT-25s; S-T Commercial and Military Trainers; Exhaust Manifold Systems and Bomber Assemblies.

Maintenance Man's Credo Summed Up In One Word—*Accessibility*

By PEGGY GUETTER

From the designers and experts come predictions on future planes, flight conditions, cargo, potential traffic and a hundred allied subjects, but what are the ideas of the airline operations personnel? What do they want in a postwar plane?

With this in mind, *American Aviation* sought the answers from the men and women who make blueprints an actuality during a series of informal "hangar sessions" at Lockheed Air Terminal, Burbank.

Maintenance men are 100% for one credo which is summed up in the word, *accessibility*.

G. A. "Joe" Putnam, maintenance superintendent for TWA's Western Division, who has spent 15 years trouble-shooting the mechanical problems of an airline, places quick change units and accessibility to the units as an immediate must. He hopes to see a change of power plant unit within 40 minutes as compared with two hours.

Looking far into the future, Putnam feels that striving for ultimate efficiency of the power plant will bring the most radical developments. "Jet propulsion," he points out, "is already on the way, and perhaps we may find electricity as the propelling force with giant turbines transmitting power to a plane while in flight."

United Air Lines' chief at Burbank, Hector Raymond, feels "The biggest improvement to expect, and it's one for which we've asked many times, is a removeable firewall, one that can be removed just as we do a piece of cowling. I'd like to also see the engine have no other function than to power the airplane. Let there be auxiliary power, say a small compact motor, to operate the accessories now tied to engine power."

For Improved Firewalls

Ed Hines, American's superintendent of maintenance, is another advocate for improved firewall construction. When it comes to accessibility of units, Hines looks for unit interchange in wings and heating systems as well as engines.

He anticipates interesting developments in design of hangars and hangar equipment to handle four-engine equipment. "Even though we aren't looking for huge B-19 type of aircraft, developments along this line will be interesting to watch," Hines commented.

Over at Western Air Lines, maintenance superintendent John Diggle cautions against loading an airplane with an excess amount of automatic "gadgets." "Then, too," Diggle added, "there should be a standardization in engine mounts, no matter what manufacturer's engine is used."

Ed Eatchel, assistant superintendent, foresees engines that can be changed in less time than a spark plug. Spare engines would be available at all stations, and a test stand warm-up would do away with test hops.

"When we have transcontinental planes speeding across the country in eight to nine hours," Peter Griscon, crew chief, contemplates, "there is the possibility that sleeper planes on domestic runs can be completely discarded. Luxurious lounge chairs will be just as comfortable, and the savings in weight and space would mean better facilities for baggage, mail and express."

A Woman's View

Flo Stolzman, TWA's chief hostess for the Western division, wants to see a miniature kitchen on deluxe airplanes, a compartment which is entirely closed off from the rest of the airplane. "A steam table for hot foods and an ice box for cold drinks are two essentials we need."

And adding to this, Sam Judd, Pan American's station manager, said he was stepping aside from operational suggestions to stress the importance of improved food service as the "one thing every passenger wants in an airline."

When it comes to the question of cargo, all agree the field is wide open for improvements, both in designing for combination passenger-cargo and all-freight planes. Another thought was expressed in several places that the work of the cargo handler would develop into a highly skilled category.

Robert Caskey, area manager of air cargo for UAL, describes a cargo plane with pit entrances to cut ground loading time in half. Three such entrances would be found on both the port and starboard side. A bin behind each pit would hold cargo assigned for specific cities en route.

American's chief pilot, Gene Stotts, expects to see several sizes in cargo ships equipped with sides which lift up for rapid loading and unloading.

In discussing future airways traffic, Stotts put forth the possibility of dual airways, one for East-bound traffic, the other for West-bound.

While on the question of traffic, TWA's flight superintendent J. F. Albert foresees radar on all commercial planes. "This should eliminate 'stacking' at an airport, cutting 10 to 15 minutes in schedule time, while bringing a plane directly into the field."

"Eventually," Albert said, "all these contemplated advances should mean no cancelled schedules because of weather on a particular route. Without encroaching on local revenue, long distance schedules should be able to operate over any weather-free route to reach the destination."

As an after-thought, Capt. Fred Kelly, WAL's chief pilot who has been in the cockpit of an airplane since the days of the Douglas M-2 mail plane, added this point to the discussion—"Tell the manufacturers not to forget the flight crews. They'll be flying longer distances than ever before, and comfortable cockpits, especially seats, would be appreciated."

Braniff Adds 4 Directors

Braniff Airways, Inc., Dallas, Tex., has made four additions to its board of directors. They are: Ferdinand Eberstadt, a partner of F. Eberstadt & Company Co., president and director of F. Eberstadt & Co., Inc., a director of Chemical Fund, Inc., and of Emerson Radio and Phonograph Corp.; Roger W. Whiteford, senior member of Whiteford, Hart & Carmody, law firm of Washington, D. C.; George A. Butler, of the law firm of Butler & Binion, Houston, Texas; and Fred Jones, Ford dealer of Oklahoma City and Tulsa.

Five directors have served previously and were re-elected for the coming year. These are: T. E. Braniff, Charles E. Beard, Hal C. Thurman, R. C. Shrader and C. G. Adams, all of Dallas.

TWA Makes 3,159th Atlantic Flight for ATC in Two Years

Transcontinental and Western Air, Inc., has rung up a record of 3,159 ocean flights for the Air Transport Command in two years, Jack Frye, president, announces. More than half that number—1,647—represented crossings of the North and South Atlantic, with the remainder covering flights across the Caribbean to South America, between the United States and Iceland, and between Africa and the United Kingdom. Special missions also were flown to Asiatic points from North America, Europe, and Africa, Frye said.

Eatchel Stolzman Diggle Putnam Stotts Caskey

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You can get one of these Wall Charts of Cable Parts, too, on request

FOR EFFICIENCY'S SAKE KNOW YOUR SOURCE OF SUPPLY

Even Amphenol's biggest customers scarcely know all we make. The breadth of our 7 lines covers practically every means of electric connection outside the light and power field. Items already marketed under the Amphenol name are only an index to what we could make.

Charts like the above serve as useful check lists when posted on the wall in the engineering department. Save time in drafting, specifying and ordering. Let us send you this Cable Chart. How many?

AMERICAN PHENOLIC CORPORATION
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Officials of 5 Airlines Oppose International Air Monopoly; Urge Competition

Opposing international air monopoly in any form, officials of five domestic airlines told the recent annual meeting of the Washington Board of Trade that competition, under reasonable Governmental regulation, would assure American leadership in postwar world aviation.

Following are excerpts from the speeches:

• **Kemp:** (American) "It is unthinkable . . . that the orderly expansion of American international aviation, under the guidance of a constructive Governmental policy, should ever have to face the threat of monopoly . . . I say it is unthinkable, but it is being proposed. Those who propose it . . . have misjudged not only the spirit of the American people, but they have misjudged the very concepts upon which our people have built this great country."

• **Solomon:** (Northeast) ". . . heretofore our transoceanic aviation and its development beyond the borders of the U. S. was for many years the handiwork of one company . . . Pan American Airways and I know of no one in aviation who is not willing to pay tribute to PAA's pioneering. Just prior to the war, another American company was certificated to fly the Atlantic . . . American Export Airlines. It too, has established a splendid record of efficiency. Even before AMEX joined us in opposition to monopoly, we were eager to see its rights and those of PAA sustained in the international field. We were just as eager to see those rights maintained as we were to see some of the domestic airlines granted similar rights."

• **Bryan:** (TWA) "Since the outbreak of the war the 17 airlines of the U. S. subscribing to this policy (of competition) have flown over 5000 trans-ocean crossings carrying critical military personnel and equipment over millions of air miles . . . the proposal of a monopoly to control all our postwar foreign aviation is radical and revoluntionary. Our history discloses no parallel for it . . . There are 133 Class 1 railroads. There are innumerable bus and truck lines, coastal and river steamship and barge lines . . ."

• **Monro:** (PCA) "The intensive competition among our domestic airlines has resulted in one important development after another . . . when the peace is won, the stored-up impetus of American inventive genius as applied to the airplane will open new fields of accomplishment and new and broader concepts of how we may better serve the public interest. As we emerge into the air age to come, we have to meet the competition of other nations. We do not fear this competition. We believe that we can challenge it with complete success. But we hope that our demand for civil and commercial outlets throughout the world will have been met."

• **Brattain:** (Eastern) "The overwhelming majority of the airlines composing our great domestic network are solidly for the principal of private ownership and management to maintain the business initiative that is characteristically American and the operational efficiency that comes from competition. Either Government operation or monopoly would first impair and then destroy both the objectives. Whether you call it monopoly or the more euphemistic title "chosen instrument" it would be only the forerunner to government ownership . . . "

Planes "Take-off" from Trucks

TRUCK LINES have become the runways from which planes take off. They are the vital outdoor production lines that link parts and sub-assembly plants on schedules exactly timed to the production flow, though the plants be located hundreds of miles apart. It is literally true that not a plane part flies before it rides on a truck at some stage . . . or during many stages . . . of its manufacture.

Lockheed and Vega's use of truck transport is typical. A fleet of Super Power Whites hauls huge wing sections and dorsal fins from sub-assembly plants hundreds of miles from the final assembly plant. Dependable truck transportation made it possible to locate these sub-assembly plants in localities where manpower and housing shortages were not so acute as in the area of the main plant, thus, speeding-up production.

Not all trucks are geared so directly to war production . . . but every truck today is a vital link in our military and essential civilian economy.

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Builders of U. S. Army Tank Destroyers, Scout Cars, Half-Tracs, Prime Movers and Cargo Trucks, the complete line of Super Power Trucks and Tractors, City and Inter-City Coaches, Safety School Busses and the Famous *White Horse.*

White

FOR MORE THAN 40 YEARS THE GREATEST NAME IN TRUCKS

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Lampland

Durst

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Operations

Midcontinent Airlines announces the following promotions from reserve captains to captains: **Scott Spires, Sam Giberson, C. D. Woodside, Eddie Holman, Clint Larson,** and **Homer Mouden. W. A. Pickering** was raised from first officer to reserve captain. Recent staff additions include first officers **W. W. Martin,** former TWA co-pilot; **L. W. Vinther, T. G. Lucas, S. A. Merrill, J. H. Graham,** and **Harlan H. Piper.**

Capt. S. F. Whitaker, million-mile pilot with Delta Air Lines recently received the Army Purple Heart, for wounds received in the first World War, from Lt. Col. C. D. Wright, deputy commanding officer of Selman Field, La., at a recent ceremony at the field.

Capt. Audrey D. Durst has been named chief pilot of the Atlantic Division of Pan American Airways to fill the vacancy created by the appointment of **Capt. Harold E. Gray** as division manager of operations. PAA also announces that **Donald Lampland,** formerly assistant to the division engineer of the Atlantic Division, has been named senior staff engineer at the transatlantic terminal, La Guardia Field, N. Y.

Executive

Robert Black, president of White Motor Co., has been elected to the board of directors of Pennsylvania-Central Airlines.

Roger Williamson has been appointed executive assistant to O. M. Mosier, vice president of American Airlines, and is assigned to the Washington, D. C. office. American also announces that **Fred M. Glass,** former attorney for the airline, now in the service, has been promoted from Major to Lieutenant Colonel.

Lieut. Col Fred Crawford and **Lieut. Col. Jim Henry,** both executives of Pennsylvania-Central on leave with the Army, are now based in England.

Newman

Calliott

O. T. Larson, vice president of Trans-Canada Air Lines, has returned to his base at Winnipeg after performing an important special mission in India.

Wilbert Fred Calliott has been appointed General Auditor for American Airlines.

C. G. Morehouse has been elected president of Standard Parachute Corp., succeeding **C. E. Fauntleroy,** who remains as general manager. He was formerly executive vice president.

Iversen Heads Executive Committee of PCA Board

Lorenz Iversen, president of the Mesta Machine Co., has been named chairman of the executive committee of the board of directors of Pennsylvania - Central Airlines. Iversen, who has been a PCA director since 1938, succeeds the late George T. Ladd. He has been president of Mesta since 1930 and is also a director of the Fidelity Trust Co. of Pittsburgh.

Iversen

Traffic

Homer J. Merchant has been named acting Eastern sales manager and **S. I. Newman,** acting Western sales manager, of United Air Lines, **Harold Crary,** vice president in charge of traffic, announces. **Warren Burke** has been named DTM in San Francisco.

Melvin T. Brockman has been named manager of air-truck service for the air cargo department.

Floyd M. Williams has been appointed to the cargo-traffic department of American Airlines as general superintendent of air mail traffic.

Robert W. Hallett has been appointed assistant division traffic manager for the Atlantic Division of Pan American Airways.

A recent promotion has come to Col. **Robert Montgomery,** ex-TWA DTM, now headquartered in London as top priority man for the Air Transport Command. TWA has named **Edward J. O'Brien** DTM at Phoenix.

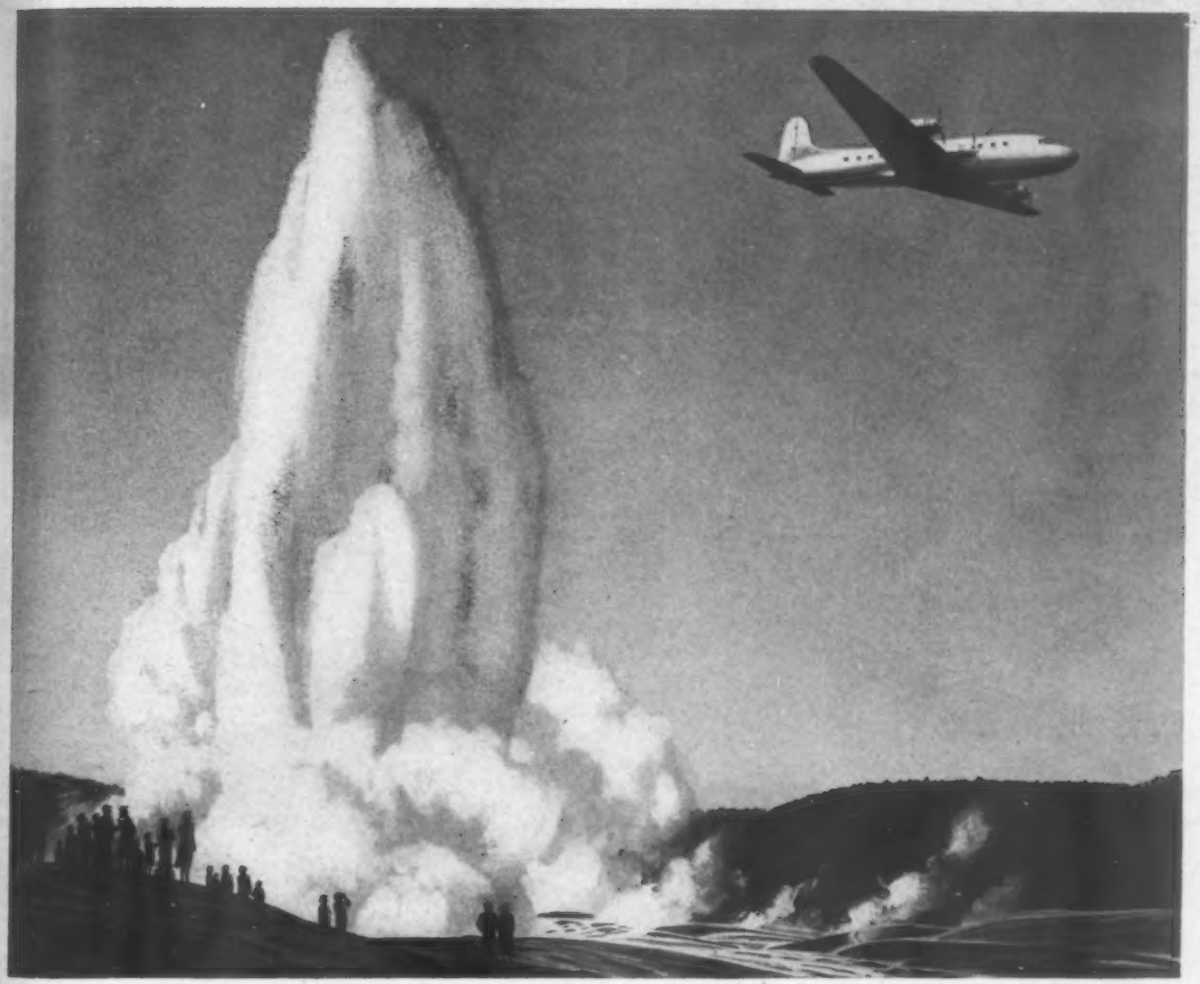
Robert Van Roseboom has been appointed DTM for Western Air Lines in the San Diego territory.

Al Emery, DTM for American Airlines at Baltimore, is sponsoring a course on air transportation at the University of Baltimore, with various air experts as guest lecturers.

W. M. "Bill" Morgan, Oklahoma City newspaperman, has been appointed special representative in Oklahoma for Braniff Airways.

Hal Wright, United Air Lines traffic representative in Washington, D. C., for the past two years, and formerly with United in Chicago, entered the Army April 10.

American Airlines announces that **John A. Smith,** Western superintendent of air cargo, has been elected a member of the board of directors of Southern California's Foreign Trade Association. **Russell H. Potter** has been appointed national promotion director, leaving the position of acting director of the Office of Price Administration, State of New York.



Classroom aloft in the *Age of Flight*

It is one thing to *read* about a certain place, and quite another thing actually to *see* it. That's why the airplane can be an important factor in the post-war field of education.

By plane, the student can be brought into first-hand contact with his subject matter. Any city, any locality in the country can become a living laboratory for him.

Whether he is studying government, sociology, economics, geology, engineering . . . the student will find many points of vital interest along United's strategic Main Line Airway.

In a few short hours, huge Mainliners will take him to the city of Washington, where his government lives and works. He can see the busy iron ore ports of the Great Lakes, the teeming packing centers of the Midwest, the scenic and scientific marvels of the Far West and the vast Pacific Coast. From the Statue of Liberty, in New York Harbor, to the Golden Gate Bridge, over San Francisco Bay, the entire route of United's Main Line Airway is alive with educational riches.

Before students can enjoy these wonderful field trips of tomorrow, free men must make certain that education survives in a free world. After victory, among many things, will come the glorious Age of Flight . . . when "classrooms" will travel 220 miles an hour . . . bringing to American students new knowledge of, and greater love for, their native land.

★ *Buy War Bonds and Stamps for Victory*

UNITED AIR LINES

THE MAIN LINE AIRWAY

In the great production boom of the past 20 months, new ideas, and better ways of performing all kinds of operations have been developed. Such data can be exchanged, for the national good, in wartime.

Amphenol has collected data and pictures on many such improved methods within the broad fields of aviation manufacture, electronics and modern shop practice in general. The first booklet of "OK Methods" is offered freely for its advantages in your work. Write for copies. Use the convenient coupon.

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EAL Earned $2.42 Per Share in '43

Eastern Air Lines, Inc., in the year ending Dec. 31, 1943, earned $1,426,859, or the equivalent of $2.42 a share, compared with $5.99 in the previous year, according to announcement by E. V. Rickenbacker, president and general manager.

This variation, it was pointed out, is due almost entirely to the excess profits tax liability in 1943 and the non-recurring profit of $764,951 on sale of equipment in 1942 on which the total Federal taxes were computed at the rate of 25%. Elimination from 1942 revenues of this profit on sale of equipment results in a net profit of $4,898,457, or $8.30 per share, before Federal taxes on income, in 1942, as compared with a similar profit of $5,176,859 or $8.77 a share in 1943, "a more accurate statement of the actual operating results in the two periods."

Total revenues for 1943 amounted to $16,012,460 compared with $16,339,250. Normal and excess profits taxes amounted to $3,750,000, an increase of $1,622,095 over 1942.

Referring specifically to Eastern Air Lines' operations with the war effort, Capt. Rickenbacker reported that the company's Military Transport Division has operated a route of approximately 5,000 miles beyond the borders of the United States. Since May, 1942, over 40 million pounds of cargo were carried 65 billion pound-miles, and more than 52,000 military passengers were flown 100 million passenger-miles in this operation. Price Adjustment Board has reviewed the company's operations with respect to profits arising from contracts with government agencies for the year 1942 and no renegotiation payment is required in respect thereof.

No dividends have been paid to date. Commenting on this policy, Rickenbacker said: "It is your management's conviction that profits and dividends should be incidental to the devotion of all resources to a program of rapid but constructive expansion designed to reestablish in civilian life the men now in uniform."

Balance Sheet, Dec. 31, 1943, showed assets of $22,176,745. Current assets were $19,722,521 including cash $6,598,540; cash restricted to reimbursement of costs under U. S. Gov't contract, $1,367,150; U. S. Gov't securities, at cost $8,600,416. Accounts receivable were $3,156,413 including from U. S. Gov't Departments $1,407,107 unreimbursed costs and accrued fees under Gov't cost-plus-fixed-fee contract less $1,367,150, cash advanced, $819,333; traffic and agents $664,251; miscellaneous less reserve $265,720. Other investments $72,755. Postwar refund of Excess Profits Tax $350,000. Property and equipment: flying equipment less $3,411,520 reserve for depreciation, $1,082,989; building and other equipment, less $956,861 reserve for depreciation $654,125. Spare parts and supplies, at cost, $155,962; deferred charges $138,391.

Current liabilities were $6,173,989 including trade accounts payable $708,410; estimated provision for Federal taxes $4,154,645; accrued liabilities $513,518; air travel plan deposits, less transportation purchased $492,485; transportation purchased, not yet used $304,929. Reserve for overhaul of flying equipment $94,561; Reserve for contingencies $100,000. Capital stock $2,950,970; capital surplus $3,601,231; earned surplus $9,255,993.

Research, Engineering and Manufacturing "Know How" of Pioneer Parachute Co. and Cheney Bros. are achieving

PERFECT *Parachute* PERFORMANCE

Pioneer Parachutes are built to be fool proof and foul proof. To achieve this perfection, every production detail is important — every testing method vital.

Pioneer Parachute Company, working in close collaboration with Cheney Bros., form the team that achieves perfection, because it combines the "know how" of the nation's leading parachute manufacturer with the skill of the country's foremost fabric weavers. Into each individual parachute part and into every yard of fabric goes the relentless research, painstaking manufacture and modern testing techniques that Pioneer Parachute has at its command.

Pioneer Parachute Company's constant development of new parachute models embodying greater strength with less weight and bulk — their own specially designed, exclusive Parachute Test Tower — and the advantage of close collaboration with Cheney Bros. are just a few of the reasons that establish Pioneer Parachutes as the most important factor in the parachute industry.

THE MACHINE THAT TESTS FABRIC POROSITY

This machine measures the amount of air that passes through the fabric. It automatically records the number of cubic feet per square foot per minute that flows through the fabric under a given differential in pressure. Other machines are used for testing tensile strength, tear resistance, elongation, thickness, width and weight. Rigid tests such as these help achieve perfect parachute performance.

ARMY E NAVY

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Builders Urged to Study Airport Design

Contractors Have an Opportunity to Make Invaluable Contribution to Future of Aviation, Says Foley

By E. J. FOLEY

WHY DOESN'T SOME established building-contracting firm step into the airport design field and really find out what it's all about?

Any organization with enough *guts, idealism, ability and interest* to move up on this project successfully will be making a singular and invaluable contribution to the future of aviation. But the job takes *all four things* so maybe we shall never see it done.

Foley

Intestinal fortitude and idealism are obvious prerequisites to such an independent undertaking. There is no one who can *guarantee* that a dime's worth of business would come to a concern who spent 50 or 100 thousand dollars in the study. The significance of the role of Federal, State, County and Municipal Governments in the airport program's future makes it an elusive deal all the way around. Politics and bids, local architects, and regulatory agencies add up to a frightening discouragement to such a program.

Problems Unique

Ability and interest are similar requirements. The problems of airport design are unique in total. One or two of them may be found solved in manufacturing plants, one or two more in railroad terminals, another few in highway practice. But to our knowledge, in no other undertaking can they all be found to exist.

This very fact indicates the value of such a qualified study. The parties concerned in airport design today are all qualified *to a degree;* are all interested *to a degree.* These limitations to knowledge and interest may lead us to some *complicated solutions* of some *simple problems.* This is an unhealthy and probably dangerous predicament.

Of all the parties interested in airport design, it looks to us as though the airlines are in the best position to offer either designs or consulting aid. This is no criticism of the other parties involved. We simply recognize the educational effect of the day-in-day-out large operations of the airlines. All of the carriers have offered advice and aid to communities on airport problems and several have established airport departments in recognition of the importance of airport projects to their future.

Yet, the airlines should not be expected to spearhead the solution to this problem as we see it. If at present, there is no effective medium to accommodate this important work, then we suppose that as much as possible must be done by the carriers.

The first problem in airport design *and the simplest* is the development of a family of runway patterns. It is in this phase of the program that the Federal Government through the CAA is definitely interested. This interest is entirely natural because the runways are actually ends of the airways and are a link in the safety chain of aviation.

In some airports, runways and buildings have been designed independently of one another. These ports are reminders of the fact that you *can't* separate runway and building development.

Balance Needed Again

We don't want to bore you with repetition but as a part of this subject we have to remember that balance between runway capacity and ultimate number of loading gates is an important problem in the design.

An engineering-contracting firm could do a world of good in establishing *efficient flow patterns* through the airport. We all agree that the operation of any airport regardless of size or scope of functions is a matter of *flow.*

Taking a quick look, here are a few of the "flows": aircraft from point of landing through loading gate to point of takeoff; aircraft from loading gate through maintenance shops to loading gate; aircraft engines from aircraft through overhaul shop to aircraft; passenger from airport entrance through terminal to plane; cargo and baggage through terminal to and from airplane; sightseers from airport entrance to observation gallery and back. It won't be any surprise to our contractor-builder to know that the object is to get all these flows *short* and/or *fast.*

If space permitted we could prove by example that everyone of these "flows" generates problems, few of which are clean-cut in detail. Yet we're convinced that many of them will yield to simple functional solutions when they are subjected to the attack of comprehensive experience.

Pictures Large Airport

As one example of the problems, picture an airport so large that the extreme loading gates are half a mile from the terminal. An airplane is unloading at Gate A; another airplane is loading at Gate B a mile away; transferring passengers must move in both directions between Gate A and the terminal and Gate B and the terminal; baggage moves simultaneously in all these directions.

Do we need space for three limousines at each gate plus baggage trucks? Do the passengers walk? Or in the near future when airports this large are operating, will we have endless belt sidewalks? The solution should be direct and functional.

This is only one little corner torn off the pattern of airport design. Expandability in tune with the traffic is another somewhat trite requirement. The design for primary (small) airports is not any simpler than for the large.

About a year ago we took a shot in the dark toward engineer-builder collarboration on the airport design problem. This just goes to show that we have almost had time to decide that this suggestion is sound. At that time we wrote to the Research Department of the Austin Company but that was the wrong time—too much war plant construction. But now would seem to be a more propitious time and the importance of the problem deserves the most capable attention available. Accordingly, we again throw in this suggestion.

We mentioned the Austin Co. simply because we personally respect their approach to many engineering problems and the modern clean-cut designs typical of many of their projects and, in our opinion, entirely appropriate to an airport. Obviously they are not the only people eligible and we don't hold any brief for anyone. Our concern is only in the value of the idea, if any.

No Place for Pessimists

As we said, the pessimist might be able to prove that the airport design study would be an idealistic unprofitable venture for any firm. It would, if properly carried out, result in the firm's becoming an expert in a field of comparative amateurs and *we can't see* how this could miss paying off somehow. After all, insurance and advertising are considered wise expenditures in all businesses, and they offer no guarantees of return.

Assistance would be plentiful. Surely the airlines would be glad to collaborate on the exposition of the problems and questions plus their own slant on how they may be solved. The CAA and municipalities ought to be glad to work with such a concern and thus relieve themselves of some headaches. Naturally, we're not empowered to speak for anyone but ourselves but the idea ought to be explored thoroughly.

If no capable company will go for such a splendid contribution to the future of aviation, we'll be mighty disappointed. Heaven knows this would hardly require going overboard in the matter of venture capital. What is your reaction to the idea? Do you have any qualifications to add or subtract? What would you suggest be done to encourage some engineer-builders to have a go at it—if you think it's okay?

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You have long had the need. Three years ago Scott Engineers began to design, build and test automatic steerable and full-swivel tail wheel assemblies to meet that need. Today—the new Scott "3-24" Tail Wheel Assembly is a perfected and practical reality—ready for service on nearly all makes of light aircraft.

Providing the inherent safety and maneuverability in taxiing of the steerable type, including more effective control in strong cross-winds, this new model also provides the advantages of the full-swivel assemblies: easier ground handling... sharper taxiing turns... protection against damage to parts from severe usage.

Thoroughly tested for field service, the Scott "3-24" stands out as an advanced development embodying the greatest number of potential service hours ever built into a tail wheel assembly!

FEATURES

1. Rugged Universal Belectromal Bracket fits both 1½" and 1¼" spring leaves.
2. Patented Automatic Mechanism—dependable, long-wearing, protected by streamlined steel cap.
3. Large area Hard Bronze Swivel Bushing, grooved for lubrication, easily replaced, sealed with metal dust cap.
4. Single Arm Fork of drop forged chrome alloy, gives maximum freedom from mud and ice accumulation.
5. Wheel: High-strength aluminum alloy castings rigidly locked with three AN bolts. Large Timkep Roller Bearings, grease packed for long life. Felt grease seals and tight dust caps.
6. Tire: 6 x 2 solid cushion with steel wire bead. Can't come off.

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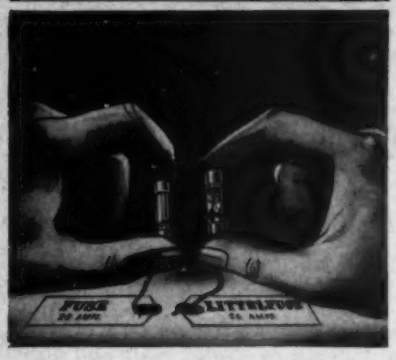

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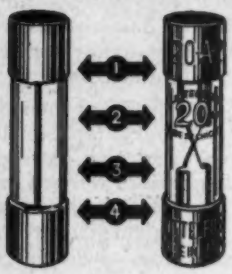

1 Cap cemented on. Easily loosened.

1 LOCKED CAP ASSEMBLY (Pat.). *No cement.*

2 No reinforcement of fuse element.

2 Elements twisted at 90° against severe vibration.

3 *Mechanically* polarized. Responds to vibration.

3 *Mechanically* depolarized against vibration.

4 Unprotected against contraction and expansion.

4 "Gooseneck" takes up contraction and expansion.

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Equipment News

Plastic Inspection Mirrors

This is a set of Lumarith plastic inspection mirrors, molded by B. W. Photo Utilities, 1346 East Walnut St., Pasadena, Calif., and distributed by F. P. Kretchmer, 3535 Hughes Ave., Los Angeles, Calif. These tools, claimed to be most popular, are equipped with sliding knobs which operate a small rod adjusting the mirror to the angle required. The light weight of the plastic is said to reduce fatigue and, at the same time, provide warmth to the touch in summer and winter. Lumarith is a product of the Celanese Celluloid Corporation, 180 Madison Ave., New York City.

High Tension Ignition Cable

The Wire and Cable Division of General Electric at Bridgeport, Conn., announces a new high-tension ignition cable with Neoprene sheath-type cable, which is said to have high heat, moisture and oil resistance, and will withstand the effects of an electrical discharge at low atmospheric pressures. The flexible conductor of the cable consists of Monel wires twisted together and covered with an insulation of low-capacitance rubber compound reinforced by a braid of glass yarn for added tensile strength. The outer sheath is marked to conform with AAF specs, and an overall thin coating of transparent wax aids in handling and installation.

Injection Carburetors

Development of a new series of aircraft "injection carburetors," which maintain the ice-free characteristics of larger types that now equip many of America's combat planes, is announced by the Stromberg carburetor division of Bendix Aviation Corporation. Suitable for small airplane engines up to 200 hp. the new, smaller "PS" series of Stromberg injection carburetors is being produced for the Army Air Forces for use in helicopter engines. Incorporating basic design features called for in Army and Navy specifications for smaller aircraft the new smaller carburetors are single barrel units and can be adapted for use in any one of three positions—updraft, downdraft or horizontal, at the choice of the engine designer. All models are equipped with a vacuum operated, single diaphragm accelerating pump and a combination manual mixture control and idel cut-off. Automatic mixture control and additional power enrichment features are optional in all models.

Hydraulic Axle Jack

This is the new Malabar Hydraulic Axle Jack, which is said to offer three

distinct advantages: (1) lifts the wheel in a vertical plane; (2) can be spotted under the axle when tire is deflated and clears the spread of the rubber; and (3) combines low minimum height with sufficient lift range to permit tire changes. It consists of two units, the chassis and the oscillating hydraulic lift. Under load the casters retract and the jack rests on wide pads under the chassis. It is available up to 10 tons capacity, and in several minimum and maximum heights. The illustration shows the jack fully raised.

Plastic Pilot Seat

This pilot seat, weighing less than nine pounds, is now being manufactured by Plastic Fabrications Company, 2817 Council St., Los Angeles, Calif. It is developed by Thermo-Elastic forming of laminated phenolic sheets. Cherry Blind Rivets were used in fabricuating the seat to insure ease of installation in the plastic material as well as binding action and coverage of the hole.

FASCISM vs. "Yankgenuity"

We are fighting Fascism wherever it rears its ugly head — fighting it with planes, tanks, guns and free men — and with our exclusive weapon — "Yankgenuity".

Yank (ee in) genuity dates back more than 150 years. Invention of the cotton gin, steamboat, telegraph, telephone and the automobile are fair examples of this creative genius.

Invention of a practical airplane was also a Yankee first. While conceived as an instrument of peace by the Wright Brothers, Fascists soon saw in the airplane terrible implications for the land of its birth.

And so Poland, Rotterdam, London and Pearl Harbor! Could the Yankees adapt their instrument of peace to war in sufficient volume — and on time — to be effective? The Fascists thought not. The present and certain future course of the war proves the power of "Yankgenuity"

When the Fascist rats have been trapped and the world is again ready for using airplanes for peace, Doak Aircraft will continue contributing to aviation progress.

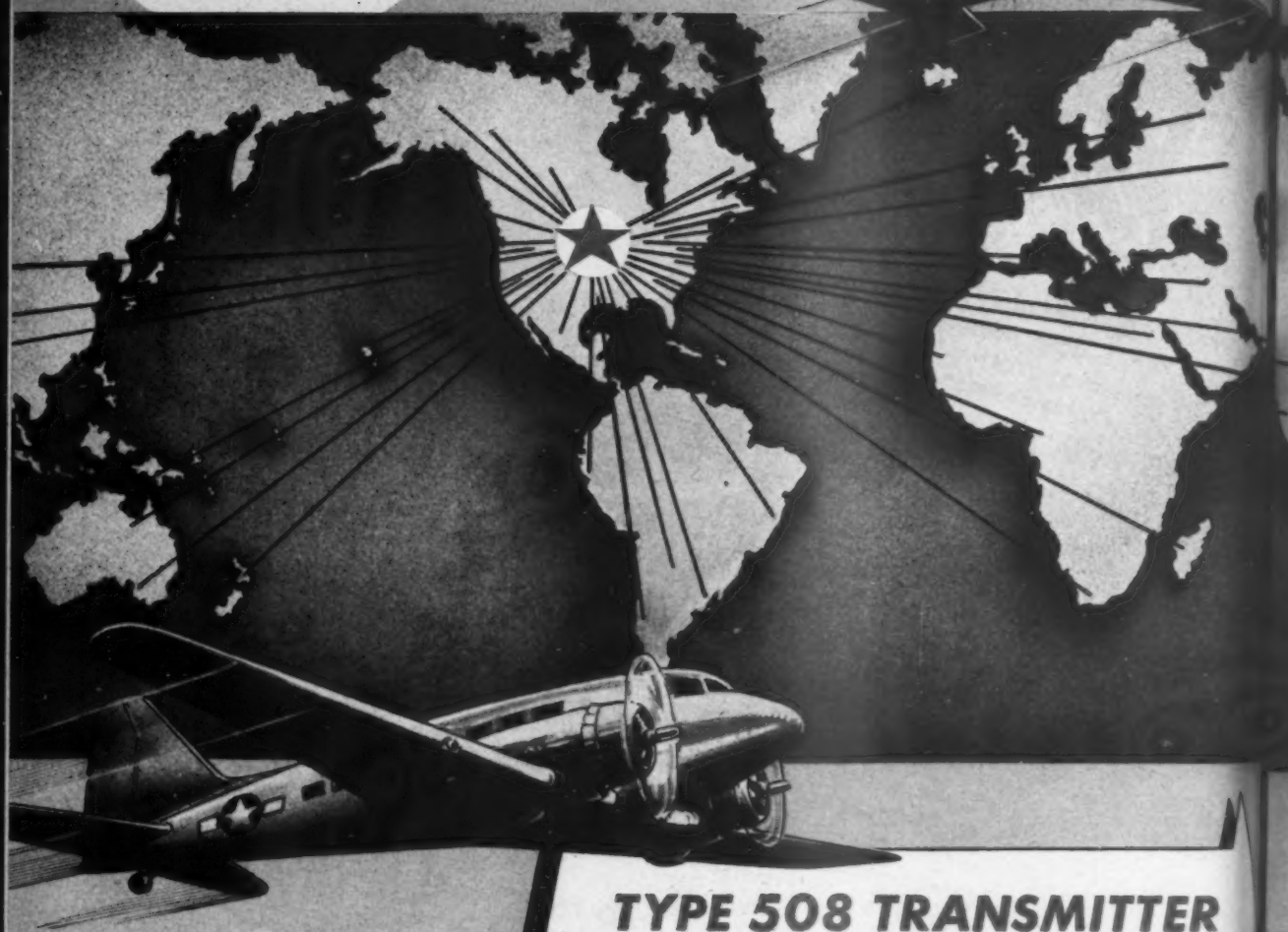
DOAK AIRCRAFT COMPANY, INC.

TORRANCE, CALIFORNIA

WORKING AROUND THE CLOCK

INSURE YOUR FUTURE — INVEST IN WAR BONDS

AAC TRANSMITTERS



TYPE 508 TRANSMITTER

(Illustrated at right). Type 508 Transmitter as designed by AAC for Army Airways Communications Service. Power output 450 watts each channel. Types of emission A1, A2, A3 and FM teletype. Five channels can be operated simultaneously. Single or dual modulator can be supplied.

E-34

AAC Products

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THE Air Transport Command has become the greatest air transportation system in the world . . . delivering planes, materials and personnel to the Allied forces everywhere!

As ATC pilots fly the seven seas and girdle the earth they are served by communications systems of which Aircraft Accessories Transmitters are an important part. These "508 units" are an outstanding example of the engineering skill and production tempo of Aircraft Accessories. Designed specifically to performance requirements of Army Airways Communications Service (AACS), which sets up and operates radio facilities for the ATC, this equipment is now in operation at many of the widespread world outposts maintained by AACS.

This type of AAC equipment can be readily adapted to immediate use by other airlines. Deliveries can be made in remarkably short time, if adequate priority ratings are available.

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Industry Survival Is No. 1 Problem, Douglas Declares

SURVIVAL, rather than profits, is the No. 1 problem of industries devoted to war production, Donald W. Douglas, president of the Douglas Aircraft Co., told his stockholders in a report announcing net earnings of $5,952,257 from sales of nearly a billion—specifically $987,687;196.

In the fiscal year of 1942, the company earned, after renegotiations, approximately $9,000,000 on sales of $500,000,000 and in 1941, about $18,000,000 from sales of only $180,000,000.

Out of the billion dollar volume of 1943 operations, the company paid $363,000,000 in wages and salaries to employes and another $50,000,000 in direct taxes to Federal and local governments. In addition, about $560,000,000 were paid to approximately 6,000 sub-contractors and vendors throughout the United States and $3,000,000 to more than 9,000 stockholders.

The number of stockholders increased during the year by 6% but dividends per share showed no increase during the entire period of war-time operations, remaining constant at the rate of $5 per share since 1939.

Company's 1943 production was almost completely under fixed-fee type of contract and no further renegotiation adjustments are anticipated. Company reports increase in production of more than 200% over 1942, and 2,770% over 1939. Productive floor space under company operation increased 32%. The backlog rose to almost $3,000,000,000 during year. At rate of 1943 production, it would take three years to complete. Unit costs to the government on military aircraft were reduced an average of 22% on company's six production models. Reserve for adjustment to income including disallowances amounting to 0.6% of sales was deducted during year. Amount set aside for contingencies, $6,950,000 was 0.7% of total volume. This brings reserves for contingencies to 0.4% of current backlog and to a sum adequate for only two weeks of current payroll.

On Nov. 30, 1943, net working capital was $35,438,727. Unrestricted cash and government securities available at close of 1943 for current and future operations amounted to $41,300,294. Bank borrowings at end of year were $12,000,000, obtained from a $40,000,000 credit.

During the year, company produced 112,000,000 pounds of combat planes and spare parts, including: 15.8% dive bombers; 19.3% attack bombers; 31.4% heavy bombers and 33.5% transports. Eight models are in production and four new ones under development. President Douglas explained to stockholders:

"The aircraft industry has assumed responsibility for liabilities staggering in size and proportion to stockholders' capital. Cash items, though large in comparison to those of the industry before the war, are small relative to the bulk of payables owed the Government for taxes, to the size of commitments to the industry's thousands of suppliers, to the value of wartime plant expansion and to wartime payrolls."

Balance Sheet, Nov. 30, 1943 shows assets of $187,573,265, Current assets were $163,464,275 including cash $23,497,131; U. S. Gov't. securities $17,803,162;; trade accounts receivable (U. S. Gov't., $7,033,158) $12,342,508; reimbursable expenditures for production facilities $2,726,787; cost-plus-a-fixed fee contracts with U. S. Gov't, less $106,344,249 advance payments and reserve for adjustments, $94,213,812; inventories less $1,637,481 for partial payments received under fixed-price contracts $12,-880,872. Other assets $6,654,980. Investment in and advances to subsidiary $528,-753. Property, plant and equip. less reserves of $1,835,343 for depreciation, $13,-420,566 of which $5,444,952 represents Emergency Facilities, less $3,637,307 reserves for amortization. Deferred charges $3,504,690.

Current liabilities $128,025,547 including notes payable $12,000,000; accounts payable $45,586,514; wages and salaries payable $10,483,133; refund payable under 1942 renegotiation settlement $12,000,000; payroll deductions for bond purchases and taxes $4,150,960; accrued taxes, other than income, $5,849,609; estimated Federal and state income taxes $37,955,330. Reserves $14,083,546. Capital stock $6,000,000; capital surplus $3,993,441; earned surplus $35,-470,730.

9 Planes Allocated

The nine airplanes returned recently by the Army to the domestic airlines have been allocated as follows: American Airlines, three; Northwest Airlines, two; TWA, two; Delta Air Corp., one and Pennsylvania-Central Airlines, one.

Republic Engineer Wins SAE-Wright Bros. Award

Costas Ernest Pappas, chief of aerodynamics, Republic Aviation Corp., was awarded the SAE-Wright Brothers Medal April 6 at the SAE National Aeronautics Meeting dinner in New York "for outstanding contributions to aerodynamics in 1943." The presentation disclosed that the SAE had recognized Pappas' paper, "The Determination of Fuselage Moments," delivered before the society's annual meeting in Detroit in January, 1943, as the year's best SAE paper on aerodynamics. In his paper, Pappas described the development and potential use of formulas, prepared after exhaustive wind tunnel tests, in determining the pitching and yawing moments of airplanes.

Pappas

British Underground Aircraft Factory Hidden in Old Chalk Mine, Editor Finds

By W. W. P.

Ever since the war in Europe broke out, I've wanted to see an underground aircraft factory. Well, I've seen one. It was an aircraft parts factory making precision parts, but there are larger factories in England doing much more extensive aircraft work, all underground.

The underground factory I visited was so well hidden and so secretly located that even the two Ministry of Aircraft Production officials who escorted me had difficulty in finding it. From the air it could not possibly be discovered, at least so it seemed. By road there isn't the slightest hint that there is a factory within miles.

The site is an old chalk mine which was not in use when war broke out. Within eight months the firm of Sir George Godfrey & Partners, Ltd., had moved in and was turning out parts. The "factory" is in a series of tunnels totalling about 40,000 square feet and ranging in depth from 30 to 70 feet below the surface.

Only in a few places do you actually see the chalk mine walls, for a series of concrete tunnels has been built within the mine tunnels so that the factory is really a tunnel within a tunnel. Lighting is provided by flourescent tubes which give daylight illumination. The atmosphere is fully air-conditioned through a network of ducts. I had the great pleasure of having tea in the manager's office in as pleasant an atmosphere as though the office were in a modern building on the surface.

Canteen services are on the surface, some distance from the underground entrance, but tea is served underground. Full welfare facilities including a medical office are available underground.

The factory works around the clock with two full shifts and transports workers by bus. Few workers have their own automobiles so camouflaging a parking lot is not a problem. Many of them ride their bicycles.

The factory entrance right off a rural back-country road is unpretentious and could be passed unnoticed by the casual driver. Actually, it is well guarded as any who stop soon find out.

At one point the chalk tunnel is so high that there are two floors for offices. The operating firm likes the location so well there is even discussion of continuing to operate underground after the war. Its construction cost was no more than for an overhead factory, while maintenance is even less in most respects.

Aeronca Appoints Bennett

The Aeronca Aircraft Corp., Middletown, O., announced April 10 the appointment of Alfred B. Bennett, noted aviation expert, flier, and authority as director of postwar sales.

Test Sale of Surplus Materials May Solve Problem of Disposal

AIRCRAFT MANUFACTURERS participating in a test sale of surplus aircraft materials conducted for two weeks at the Hotel McAlpin, in New York City, have expressed complete satisfaction with the experiment, result of which in some respects exceeded their expectations. It is understood that negotiations which are still continuing will probably increase the final score by substantial amounts.

During the first few days, approximately 1000 deals for the purchase of tools, processed parts, hardware, steel sheets and other items, ranging from small to sizable amounts in dollar values, were in process. Interest continued at a proportionate scale throughout the entire sales period.

Government and aircraft plant officials, who inaugurated the exhibit and sale in the hope that it would point the way to faster and more effective disposal of present large stocks of excess material in war producers' plants, were in attendance throughout the period.

Each development was closely watched by them as the sale proceeded so that a complete, detailed report might be made available to the industry and Government agencies. This will be issued within a few weeks, as soon as results can be tabulated, and may serve as a work-sheet for similar projects contemplated for other sections of the country.

Approximately 5,000 surplus aircraft material items, representing a value of over $50,000,000, were made available to prospective purchasers. These products were selected from the surplus stocks of five industry companies: Bell Aircraft Co., Eastern Aircraft Division of General Motors Corp., The Glenn L. Martin Co., Republic Aviation Corp., and the Eclipse-Pioneer Division of Bendix Aviation Corp. Joseph E. Corker head of the Materials Disposal Department of the Eclipse-Pioneer Division was in general charge.

The surplus material showing represented the first attempt to move a large amount of fabricated parts, materials, and equipment made available through design changes and termination by the "sample-room" method. While some of the items may have been moved at less than cost, it is considered that as a whole, present values, based upon utility under revised production schedules, were maintained.

Under the plan of procedure, all prices were determined by negotiation between manufacturer or dealer and the aircraft company owner of the material, with any sales made at below the original cost of the material to the aircraft manufacturer, subject to approval by Government contracting officers. Opportunity to obtain prompt delivery from warehouses of the participating aircraft plants proved to be an important factor in the consummation of sales.

The framework of another program for the disposition of aircraft surplus materials is reported to be taking shape now at Wright Field, Dayton, Ohio. Designed to make full use of established distribution systems, the program contemplates the gathering of surpluses at centralized depots, or perhaps, later, directly from contractors to the warehouse distributors. Although still in a formative stage, disposal methods will differ with each material, following the accepted procedure of the industry involved.

Avion 'Brings Work to Students'; Plan Popular in Los Angeles Schools

Avion, Inc., has developed a major new source of manpower and the Los Angeles Board of Education has entered a new phase of vocational education.

Don I. Carroll, vice president of production for the company, who was also the first man to employ women in large numbers for aircraft production, initiated the "Industry within Education Program." Under the system, high school boys and girls carry out sub-assembly work within the school shop. The company brings the work to the students.

Consolidated Feeder Shop Aids Manpower

One solution to the manpower problem in critical labor areas has been effectively utilized by Consolidated Vultee Aircraft Corp. which established the Coronado Feeder Shop to employ women on a split shift schedule, according to the Office of War Information. Originally planned by Mrs. Rene Towers wife of Vice Admiral Towers, the feeder shop now employes 125 women and additional facilities are being planned for another 150.

"Since its beginning in May, 1943, the Coronado Feeder Shop has progressed from simple rivet-sorting to dashboard panel and bomber panel electric wiring; has a waiting list of eager applicants four times as long as its present personnel; is weeks ahead of its production schedule; and reports that absenteeism and turnover are blow that of the main plant," OWI states.

WPB's Office of Labor Production points out that, while it has none of the disadvantage of industrial homework, the feeder shops utilizes extra sources of labor supply. Production is performed under training and supervision, which not only raises the productivity rate, but also prevents most of the spoilage and waste that so often occurs in homework. Transportation of materials and finished products is also simplified, making possible higher work standards and utilization of processes not adapted to homework.

Ages of the women workers at the Coronado Shop range from 19 to 65; about 90% are married and 70% have schoolage children. Having proved their efficiency at rivet-sorting and packing repair kits, they were given all bullet-proof, de-icer and other types of hose which must be cut, air-blown clean, sealed, waxed and marked. According to OWI, "the proposed daily output of 1½ tons was exceeded by a startling figure that cannot be made public, but it can be revealed that by the first of his year hose was being cut three weeks ahead of schedule."

Leaders in APMA

H. Russell Amory, left, is the new general manager of the Aircraft Parts Manufacturers' Association. He is shown with Wallace MacKenzie, director of the newly created business services section of the Association. Amory was formerly manager of the American Chamber of Commerce in London, and MacKenzie came to APMA from the Lockheed organization.

'Big Companies' Will Stay With Aviation After War—Robinson

While many of the smaller aircraft companies probably will go into the manufacture of certain consumer goods after the war, the big companies will stick to aviation, Frederick F. Robinson, vice president, National Aviation Corporation, gave as his opinion to stockholders, at their annual meeting.

The automobile companies, he thought, would not continue extensively in aviation, with the exception of such companies as the Allison Division of General Motors. Lack of accumulated engineering experience in aircraft design would probably be a deterrent to the automotive groups, who already have a big postwar market of their own to turn to after peace is declared.

Asset value of the National Aviation Corporation as of February 29 was $16.46 a share compared with $15.82 a share on December 31, 1943, Robinson announced. The corporation hopes to acquire a small interest in the TACA line of Lowell Yerex, he said, adding that the transaction had not been closed as yet.

Discussing postwar aircraft, Robinson commented that industry estimates of annual gross volume for the immediate post war years ranged from $500,000,000 to $3,000,000,000, but his personal view was that the market would be nearer the lower level, perhaps $750,000,000 or less. This would compare with a probable gross income of around $20,000,000,000 for 1944. He said that manufacturers expected that 75% to 80% of the immediate postwar market would be military planes.

Manufacturing Personnel

Kastler

Conrad

Larson

Moon

Ripley

Samuelson

John Snure has resigned as information chief of Selective Service, Washington, D. C., to join the staff of Leston P. Faneuf, assistant to Lawrence D. Bell, president of Bell Aircraft. He will specialize in coordinating Selective Service with the company's employment and reemployment programs.

Hubert G. Larson, formerly associated with General Motors Corp., has been named procurement director of Republic Aviation Corp.

John R. Conrad has been appointed properties manager for Douglas Aircraft Co. at Long Beach, Calif. **Charles Kastler, Jr.,** is the project superintendent of the new Douglas A-26.

Joseph P. Ripley, New York investment banker, has been nominated for election to fill a vacancy on the board of directors of United Aircraft Corp.

Carl O. Samuelson has been appointed to the position of contracts manager of the Ranger Aircraft Engines Division, Fairchild Engine and Airplane Corp.

John W. Kelly, formerly assistant chief engineer of Adel Precision Products Corp. has been appointed chief engineer. H specializes in hydraulic and hydro- elec tric mechanisms for aircraft.

Sigmund A. Czarnecki, chief equipme engineer of Hamilton Standard Propelle Division, United Aircraft Corp., has be named staff assistant to the facto manager of the division, and **Park Ritchey,** assistant equipment engine has been promoted to Czarnecki's form position.

R. B. Moon, former chief of receiv development of the Radio Division, Be dix Aviation Corp. in Baltimore, h been named Pacific Coast branch ma ager of the Radio Division.

Charles F. Slick, formerly general fa tory manager of Fairchild Aircraft Di sion, Hagerstown, Md., has been ma assistant works manager. **Phil I. Ha** former Fairchild service manager a production-planning manager has be placed in charge of the newly establish quality control department. **Freder P. Culbert,** recently resigned Americ vice-consul at Casablanca and long-ti French representative for United A craft Corp., has been appointed gene manager of the Al-Fin Corp., whol owned Fairchild subsidiary.

W. G. Jerrems has been named ma ger of the Tulsa plant of Douglas A craft Co.; **Herman O. Olsen** has be appointed assistant superintendent assembly of the Chicago plant; **Jack Handley** has been given charge of ma tenance and construction of the netwo of Douglas "feeder" shops recently dev oped; **Tom H. Brennan** has been ma properties manager of plant layout equi ment and machinery control industrial e gineering and methods at the San Monica plant; and **E. N. Classen, Jr.,** h been elevated to assistant superintende of fabrication at the Chicago plant.

G. M. Williams, senior vice president Curtiss-Wright Corp., has been elect to the board of directors of the corpor tion.

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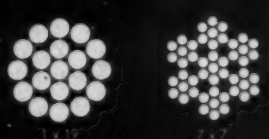

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Braniff's Charge That Big Airlines Monopolize 4-Engine Equipment Aired

WHEN TOM E. BRANIFF charged large airlines with a monopoly of four-engine equipment during recent testimony in Washington, he touched off a round of pro-and-con discussion in West Coast aviation circles which promises to equal any controversial issue of recent months.

An "off-the-cuff" compilation of conversations shows the operators in no mood to condemn the manufacturers, Lockheed and Douglas, specifically. Yet at the same time, they feel Braniff has touched upon a situation which has ramifications for operators and manufacturers alike.

Several airline executives interpreted Braniff's remarks as an overture for aircraft manufacturers, who before the war had never catered to the transport industry, to consider themselves serious contenders for future business.

By the same token, one executive for a company which has applications for West Coast service pointed out, "Three or four years ago, when the Constellation and DC-4 were underway, Tom Braniff and other regional operators couldn't have put money into development and experimentation of a new plane type. This remark holds true for my company as well.

"Therefore, just because times are changing, it doesn't seem fair to condemn the airlines which contributed engineering and financial aid. Much less, is it fair to expect Douglas or Lockheed to overlook obligations for this earlier assistance."

He added, "I think the important thing to be derived from Braniff's testimony is the unstated need for smaller operators to set up engineering departments, the moment a strengthened financial position justifies the move. He has shown us a number one 'must' in our future planning."

Another executive for a regional carrier remarked, "Although I don't feel the time lag for smaller carriers in securing DC-4 equipment after the war will place them in a poor competitive position, I do think Tom's remarks will stimulate manufacturers to closer coordination with the airlines. It's only natural that under the stress of war production, all manufacturers have had small opportunity to consider specific needs of a postwar transport industry. However, as the time draws closer for them to have customers other than the government, a shot in the arm, such as Tom administered, won't hurt their future thinking and merchandising. Then, too, we have other needs which won't be filled by either the Constellation or the DC-4."

As for the two plane types mentioned by Braniff, it is understood that the Constellation, originally conceived by Jack Frye and Howard Hughes, cannot be sold for two and a half years to any domestic carrier without permission of TWA. After that time, no permission is required.

Douglas had contracts before this country entered the war with United Air Lines, American Air Lines, Eastern Air Lines and Pan American for 61 new DC-4 planes. Each of these companies had placed engineering and technical skill as well as financial aid into developing the plane.

During August of 1941 the government placed restriction on manufacture and delivery of the planes, so the companies entered a cancellation agreement with Douglas. The Army took all planes originally scheduled for the airlines as well as all subsequent deliveries.

New contracts with the companies are being negotiated on the basis of original orders which will have a priority on delivery due to early development work and war cancellation. Based on present production rate, it should take only a few months to fill the order for 61 planes.

Sponsors of Joint SAE-NASC Meeting

These members of the Society of Automotive Engineers' committee on aircraft hydraulic equipment sponsored the joint SAE-NASC meeting in Chicago March 20. Left to right—J. P. Kovacs, Purolator Products, Inc.; B. R. Teree, Airplane Division, Curtiss-Wright Corp.; B. F. Ashton, Electrol, Inc.; George A. Rix, Aircraft Accessories Corp.; Harry Kupiec, Glenn L. Martin Co., chairman; Howard Field, Jr., consulting hydraulic engineer; and Frank W. Murphy, Douglas Aircraft Co.

Here's a Picture The Enemy Doesn't Like

WHEN a large mid-western war plant converted to the manufacture of an important chemical bomb, it looked for a while as if production would be seriously limited. Chief cause of this threatened bottleneck lay in the joining of the cylindrical center section—the operation you see pictured here.

Today, thanks to Mallory skill and experience, the problem is solved and the bottleneck removed. The core of the bomb is quickly joined by Mallory resistance seam welding electrodes. These are made of tough Mallory 3 Metal. Throughout the entire welding operation, wheel and weld are constantly cooled by a running stream of water.

As a result of this combination, three highly desirable objectives have been obtained. Welds are strong and of excellent quality. Excess warping is avoided, and dimensional stability assured. Finally, the welding wheels go through long production runs before it is necessary to dress the welding face.

Naturally, this is a story the enemy doesn't like. But then, the whole trend of Mallory advancement is running against the Axis tide. In scores of other factories today, Mallory engineering has resulted in longer electrode life . . . welds of higher strength and consistency . . . faster, better wartime production—frequently at lower cost. This same experience is ready to be of service to you—no matter what your welding problem, or to what kind of product it happens to apply. Write today for the comprehensive Mallory Resistance Welding Data Book.

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United Aircraft's Shipments Totaled Nearly $2,000,000,000 in '43; Sales $733,590,668

Shipments, including those of licensees and associated producers, of all products designed by United Aircraft Corp., totaled nearly $2,000,000,000 during 1943, according to the annual report to stockholders signed by Frederick B. Rentschler, chairman, and Joseph F. McCarthy, controller.

Sales by the Corporation for the year amounted to $733,590,668 compared with $518,970,878 for 1942. Renegotiation proceedings were conducted before the Navy Price Adjustment Board and the Corporation has been advised that no excessive profits were realized for the year 1943 under the Corporation's contracts and subcontracts subject to renegotiation..

United Aircraft Corp., and wholly owned subsidiary, United Aircraft Service Corp., reported consolidated net profit for year ended Dec. 31, 1943 of $15,396,114 after Federal taxes, equal after preferred dividends to $5.30 a share on common. This compares with $17,096,841, or $5.95 for 1942.

Net profit on sales to the government alone was approximately 1.6% in 1943, comparing with slightly less than 2% in 1942. A special reserve of $2,201,303 was charged against income account to cover write-off of expendable tools. Bank loans were cut to $11,793,796 from more than $34,000,000 a year previous, due to payment by the Navy of expenditures for plant facilities.

"Since inception of the Corporation's expansion program, the management has ever been acutely aware of the very large expenses which will be involved in the transformation from war to postwar conditions, and, as a result, the sum of $28,-004.464 has been accumulated during the three years ended Dec. 31, 1943, in a reserve to meet such expenses. Of the total reserve, $4,107,193 was accrued by charge to operations in the year 1943 and $3,897,270 in the year 1942, such amounts being equivalent to the estimated postwar refund of excess profits taxes and credit for debt retirement authorized by Federal revenue statutes."

During the year, dividends of $5 a share, aggregating $1,300,330 were paid on outstanding 5% Cumulative Prffd Stock. On June 15, 1943, a dividend of $1.50 a share was paid on common, and another on Dec. 15, 1943. Total dividend disbursements on common amounted to $7,970,103.

Balance Sheet, Dec. 31, 1943, showed assets of $232,797,500. Current assets were $206,050,684 including cash $42,433,296; U. S. Treas. Tax Notes $30,000,000; trade accounts receivable $52,309,495; sundry accts. rec., advances, $5,346,282; unreimbursed costs under cost-plus-fixed-fee contracts and accrued fixed fees, $3,221,086; inventories, including progress payments to subcontractors of $8,231,257, and less partial payments by U. S. Gov't of $85,035,380, amounted to $68,854,628. Investments $4,-149,078. Property, plant and equipment, $15,310,715.

Emergency Plant Facilities acquired for performance of French & British Contracts and other emergency expansion of basic plants, $22,505,281, less $28,650,533 reserves for depreciation, amortization and retirement. Emergency Plant Facilities under contracts with U. S. Gov't, $12,033,503. Deferred charges $1,398,770.

Current liabilities $119,381,677; including accounts payable $53,469,444; Accrued wages, taxes, sales adjustments $16,414,758; accrued incentive compensation $1,074,250; provision for Federal taxes (1942) $969,-047, (1943) $43,568,280. Advances on sales contracts $1,329,566. Notes payable to bank $11,793,796. Reserves $30,205,767. Capital stock prffed. $25,886,500; common $13,283,855. Paid-in surplus $9,895,904; earned surplus $21,020,432.

Texas Aviation Planning Conference Set for Apr. 27

Texas Aviation Week, April 27 to May 3, will feature the Third Wartime Aviation Planning Conference at the A. & M. College of Texas, College Station, Texas. Topics to be discussed include methods of meeting the increasing manpower and material needs of the Armed Forces, contract termination policies, and the orderly and constructive development of private flying and commercial air transportation. A policy-making conference on state and federal aviation legislation will be included.

Martin's Net Sales $632,163,870 in '43

Glenn L. Martin, in his letter to stockholders accompanying the annual report, revealed that sales for 1943 represented an increase of approximately 100% over 1942.

Net sales of $632,163,870 represented actual deliveries of completed products except for $172,945,964 covering costs and earned fees under cost-plus-fixed-fee contracts held by the Glenn L. Martin Co. and its Midwest subsidiary. Sales for the preceding year were $337,556,000.

A consolidated net income of $12,437,583 was reported after all charges and taxes. This was equivalent to $11.15 a share on 1,115,214 shares outstanding.

Contingency reserves instituted in 1942 in the sum of $3,000,000 were augmented by an additional $7,000,000 in 1943. During the year, $161,946,000 was paid for the services of the company's employes, compared with $117,722,062 in 1942. In both years, this was the largest single element of cost. A refund was made to the Government in December, 1943, of $18,131,140.

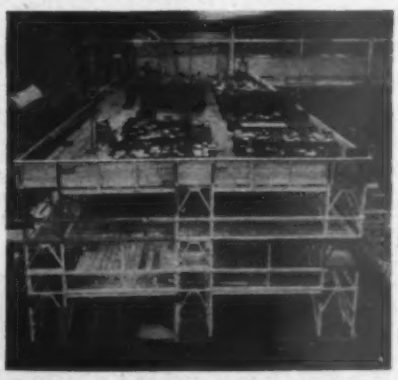
Commenting on the outlook for the coming year Mr. Martin said: "The program of our Company for 1944 is also greatly augmented. We are to continue our present production schedules on B-26 'Marauders', PBM-3 'Mariners', A-30 'Baltimores,' and power-operated gun turrets. Letters of intent for additional contracts have been entered into which will require some additional facilities, a higher employment, and a much greater responsibility during 1944. Plans are well advanced to meet this responsibility."

Consolidated Balance Sheet, Dec. 31, 1943, shows assets of $278,779,097. Current assets were $249,026,739, including cash $40,055,184; U. S. Treasury Tax Notes $25,700,400; accounts receivable $41,448,114; expenditures to be reimbursed under cost-plus-fixed-fee contracts, less $25,000 reserve, $22,044,101 advances to major sub-contractors $22,831,814; advances on purchase contracts $759,835; inventories $95,166,661.

Expenditures for Emergency Plant Facilities, including $129,353 accrued interest, $7,262,386; investments $3,129,584; other assets $11,831,951; plant, property and equipment at cost, less $4,257,109 for depreciation, $6,426,402; deferred charges $1,078,285.

Current liabilities were $230,209,145, including accounts payable, trade, including $6,595,698 due major sub-contractors, $38,-628,188, for Emergency Plant Facilities $100,094, Income Tax withheld from employes $487,537; advances received under terms of contracts $116,822,997; accrued Federal and State taxes $68,519,257; accrued wages $2,155,975, vacation wages $2,203,748. Major sub-contractors fixed fees retained $556,558; reserve for contingencies $10,000,000. Capital stock $1,-115,214; capital surplus $11,740,010; earned surplus $25,154,685.

Offices in Hull Fixtures



Plant and equipment engineers of the Glenn L. Martin Co. have seen to it that there is not a single square foot of floor space at the company's Baltimore plant wasted. Recently, they even floored in four big PBM-3 hull fixtures to provide offices for timekeepers, industrial engineers, personnel counselors, and clerical workers, who were occupying factory areas.

Nat'l Aviation Supply Co. Formed

National Aviation Supply Co. has been formed in Pittsburgh and will carry a large stock of aviation supplies and equipment. Personal representatives will be in 16 states. The company is set up to offer immediate propeller reconditioning service and repairs on all types of radios, according to Albert McGhee, president.

One man can bring the propeller from the storage room or paint rack, raise it into position, quickly align it, and slip it onto the propeller shaft. The entire operation taking approximately five minutes.

Fewer Hours in the Shop—
More Hours on the Time Table
with this
NEW PROPELLER POSITIONER

Another awkward job has been simplified, and a new specialized piece of equipment takes the place of brute force and makeshift tools. With the new Whiting Propeller Positioner manufactured under license from Consolidated-Vultee, one man can install a propeller in five minutes—a job that previously required fifty minutes and four men.

The Propeller Positioner provides—

1. A saving in manpower.
2. New safety for men and equipment.
3. Positive control—micrometer accuracy.
4. Universal adjustment—fits propellers to shafts in any position.

Hydraulic ram raises the propeller to any desired height. Universal mechanical controls tip it forward or backward, turn it right or left, "inch" it in or out to bring the hub into exact alignment with the shaft, enabling the propeller to be thrust home quickly and easily.

Write for information.

Propeller slides from the storage rack onto the padded arm of the propeller positioner and is locked in place. It is then ready to be wheeled to the ship.

The height adjustment made, the hub is brought into exact alignment. The ratchet lever then thrusts the propeller home on the shaft.

WHITING
CORPORATION
AVIATION DIVISION

Main Office and Plant: 15647 Lathrop Ave., Harvey, Ill. Western Office: 1151 S. Broadway, Los Angeles 15, Calif. Canadian Subsidiary: Whiting Corporation (Canada) Ltd., Toronto, Ontario.

Branch Offices in New York, Chicago, Buffalo, Birmingham, Pittsburgh, Detroit, Cincinnati, St. Louis, and Washington, D. C.

A. W. Gratop Heads AVCO Publicity Bureau, Toledo

The Aviation Corp. has established its own publicity bureau to handle information covering Lycoming Spencer Divisions of Williamsport, Pa.; American Propeller and Northern Aircraft Products Division plants at Toledo; and Republic Aircraft Products Division plants at Detroit. Arthur W. Gratop has been placed in charge. For 14 years prior to joining AVCO, Gratop was assistant secretary of the Toledo Chamber of Commerce. His work will be coordinated with that of John E. Wells, in charge of AVCO's advertising, contracts, and service.

Gratop

Bendix Radio Division Opens Pacific Branch

A Pacific Coast branch, under the management of R. B. Moon, is being established in North Hollywood, Calif., by the Radio Division of Bendix Aviation Corp., W. P. Hilliard, general manager, announces.

The new branch will maintain close contact with aircraft manufacturers, airlines and the armed services on the Pacific Coast in an effort to work out new radio installations and to insure satisfactory field performance of Bendix' communication and navigational devices in the area. Moon, formerly section chief in charge of receiver development at the Baltimore plant, will be assisted by Robert E. Moline.

Financial

THE AVIATION CORPORATION'S consolidated net income for the three months ended February 29, after all charges including estimated Federal income and excess profits taxes, amounted to $1,460,863. The earnings, which are subject to contract renegotiation, are equal to 25 cents a share on 5,793,513 shares of capital stock and compare with $1,103,218 or 19 cents a share on 5,782,222 shares before renegotiation in the first quarter of the 1943 fiscal year. Consolidated net sales for the first 1944 quarter totaled $17,677,800, compared with $19,177,566 a year ago. Dividends received from associated companies and other security investments totaled $619,339, against $401,849 in the first quarter of 1943. During the first quarter of the 1944 fiscal year provision for Federal income and excess profits taxes was $3,100,000, equal to 54 cents per share, and $246,000 was provided for post-war readjustment.

KELLETT AIRCRAFT CORP. has arranged a $2,000,000 V loan for financing of war contracts and settlement of contract termination costs. The Girard Trust Co., Philadelphia; Philadelphia National Bank; Chase National Bank; and the Brooklyn Trust Co. participated in establishing the credit, which is guaranteed in part by the Federal Reserve Bank of Philadelphia, acting on behalf of the War Department.

Beech Aircraft Gets $50,000,000 V-Loan

Beech Aircraft Corp., Wichita, Kan., has been offered and has accepted a 30-month revolving credit of $50,000,000 under Regulation V with a 90% Government guarantee, it was announced early this month.

The loan has been placed with a group of 36 banks headed by the Fourth National Bank in Wichita. According to the terms of the credit, the company may borrow as needed on its 90-day note in multiples of $1,000,000, bearing 3 1/8% interest, with the privilege of prepaying any outstanding notes at any time before maturity upon giving the required five-day notice. Company also has the privilege, after March 1, 1945, of terminating a part or all of the banks' commitments by giving 30-day written notice. In addition to the interest rate on amount in use, the company will pay the banks ½ of 1% per annum as a stand-by charge for that portion of the credit not in use.

In addition to the backlog of airplanes of its own manufacture, the company reports that it has received a large contract from the Douglas Aircraft Company for manufacture of complete major assemblies for "a new type of combat aircraft which is expected to aid materially in the winning of the war." This new business is expected to absorb any of the company's capacity that can later be spared from use in the trainer program.

Leading Aviation Stocks

New York Stock Exchange

	Week Ended April 1				Week Ended April 8			
	Sales	High	Low	Net Change	Sales	High	Low	Net Change
American Airlines	3,000	64¾	61	—3¾	1,600	63	61½	+1
Aviation Corp.	15,200	4	3⅞	— ⅛	6,700	4	3⅞	+ ⅛
Beech Aircraft	3,200	9¼	8⅝	— ¼	300	9	8⅝	.....
Bell Aircraft	3,700	13	12¼	— ¼	1,040	12⅝	12⅛	— ⅝
Bendix Aviation	4,700	37⅝	35¾	— ½	2,500	36½	36	.....
Boeing Airplane	9,700	15⅝	15½	.....	3,800	14¼	14	— ½
Braniff Airways	11,700	15¼	14⅛	— ⅞	4,900	15¼	14⅜	+ ⅛
Consolidated Vultee	6,700	14⅜	13¼	— ⅜	4,500	13¾	13¼	— ½
Consolidated Vultee pfd.	1,100	20⅝	19¾	— ⅛	100	20⅛	20⅛	— ⅜
Curtiss-Wright	14,600	5¾	5½	.....	17,100	5⅝	5½	— ⅛
Curtiss-Wright A	4,100	17⅛	16⅝	— ⅛	2,300	17	16⅝	+ ⅛
Douglas Aircraft	4,800	53½	49	—2½	2,100	51	50	— ⅝
Eastern Air Lines	3,600	37⅝	34¾	—2¾	1,300	35⅞	34⅞	+ ⅝
Ex-Cell-O	6,100	27½	25¾	+ ¾	10,200	29¼	27⅜	+1⅝
Grumman Aircraft Eng.	2,200	12⅜	11½	— ⅝	1,300	12	11⅝	— ⅜
Lockheed Aircraft	9,400	17⅜	15⅞	— ⅛	2,800	16¾	16⅜	— ⅜
Martin, Glenn L. Co.	25,700	20⅜	19⅜	+ ⅜	3,700	20	19½	— ¼
National Aviation	1,900	11⅜	10¾	— ¼	900	11½	10⅝	+ ⅜
North American Aviation	5,600	8⅞	8⅝	— ¼	2,500	8¾	8½	.....
Northwest Airlines	6,300	23⅝	19	—1⅜	12,500	20⅜	18¾	+1½
Pan American Airways	7,900	31½	30½	— ¾	5,400	31⅜	30¼	.....
Penn-Central Airlines	1,500	15½	14½	— ¾	1,200	14½	13⅜	— ⅛
Sperry Corp.	5,400	25¾	24¾	— ⅝	4,200	25½	25	.....
Thompson Products	1,400	38	36½	+ ⅝	1,100	37¾	36	.....
Trans & Western Air	2,000	19¼	18¼	— ½	900	18⅞	18½	+ ⅛
United Air Lines	8,300	25¼	24	—1⅝	4,100	25	24⅛	+ ⅛
United Air Lines pfd.	1,400	112¾	110	—3	400	110⅞	110½	+ ⅜
United Aircraft	7,700	29¾	27½	—1⅛	3,600	28⅝	28	— ⅛
United Aircraft pfd.	800	104½	103½	—1	800	103½	102¾	.....

New York Curb Exchange

	Week Ended April 1				Week Ended April 8			
	Sales	High	Low	Net Change	Sales	High	Low	Net Change
Aero Supply B	100	3¾	3¾	— ⅛	500	3¾	3¾	.....
Air Associates	500	9¼	8¾	+ ⅛	600	9¼	9⅛	— ⅛
Aircraft Accessories	1,100	2½	2¼	.....	1,200	2⅝	2¼	.....
Aro Equipment	2,400	7⅝	7¼	.....	1,200	8	7¾	+ ⅛
Bellanca Aircraft	1,900	4⅛	3⅞	— ¼	1,200	3⅞	3⅝	— ⅛
Breeze Corp.	2,300	11¾	11½	— ⅛	400	11¼	11¼	— ⅜
Brewster Aero	4,500	3	2¾	+ ⅛	600	2⅞	2¾	— ⅛
Cessna Aircraft	1,000	6⅜	6⅛	.....	1,000	6⅛	6	— ⅛
Colonial Airlines	2,200	7⅝	7¼	— ¼	600	7⅜	7⅜	— ⅛
Fairchild Eng. & Air	2,000	2⅛	2	— ⅛	2,100	2⅛	2	+ ⅛
Irving Air Chute	500	9	8½	.....	300	8⅝	8½	+ ⅛
Northeast Airlines	12,300	10½	9⅛	+ ⅝	4,000	10⅛	9¾	— ¾
Republic Aviation	9,100	4½	4	.....	1,600	4⅛	4	— ¼
Ryan Aero	300	3⅝	3½	— ¼	300	3¾	3⅝	+ ⅛
Solar Aircraft	400	3	3	.....	3,100	6	6	.....
United Aircraft Prod.	1,600	8⅜	8⅛	.....	900	8¼	8⅛	— ⅛
Western Air Lines	900	8⅞	8½	— ⅜	3,200	8⅛	7¼	— ⅝

Platform for Peace!

Every plane off the assembly line is another plank in the platform for peace. More planes now to hasten the hour of victory. More planes then to guard the peace and fly the commerce.

America surges into the era of flight with many new names carrying the flag. ROHR is one of them . . . a name which means long lines of sleek motors assembling into completed power plants . . . thousands of men and women Production Fighters, trained in special skills to speed giant Liberators and fleet Lightnings into the blue . . . an engineering skill that has reduced intricate tasks of bomber and fighter production to save thousands of man hours. Rohr works now for victory and nothing else, but stands ready to play a full part in the winning of the peace.

ROHR
AIRCRAFT
CORPORATION

Make war bonds your platform for future security

HELPING TO WRITE THE STORY OF TOMORROW

CHULA VISTA, CALIFORNIA

Aero Chamber Commended for Part Played in Coordinating Aircraft Parts Packaging

The Aeronautical Chamber of Commerce has received a letter of commendation from the Working Committee of the Joint Army and Navy Aeronautical Board for the part its Technical Department played last summer in coordinating an aircraft parts packaging program in the industry.

The Committee called upon the Chamber for such a program last June after hundreds of crates of vital aircraft parts had reached the war fronts rusted and corroded beyond salvage. Specifications set up by the services prior to Pearl Harbor were proven inadequate as the fronts extended further and further to remote reaches of the earth.

The Chamber's work, complementing that undertaken by the services at Wright Field and the Naval Experiment Station, centered upon four major problems:

1. Preservation and packaging of the part properly in order to insure its safety in transit and unloading.

2. Assurance that preservation and packaging would withstand climatic conditions in all parts of the world.

3. Adoption of methods which would allow for rapid de-preserving of parts, assuring quick availability for service.

4. Determination of how many given parts should constitute a unit package.

Today, industry-wide, the preservation and packaging of spare parts is fairly well standardized. Generally speaking, parts are now being shipped as follows:

(a) If the part is of a non-corrosive material, it is packaged in a specially developed waterproof outer carton.

(b) Parts which have machined or other highly polished ferrous metal surfaces are cleaned and treated with special compounds, and are then wrapped and racked in water-resistant shipping containers.

Outer containers have been developed which are able to withstand special tests to insure their stability for several days' total immersion in water. This is especially important when it is considered that problems arising in beaching operations often make it necessary to dump cargo into the water. And jungle climates are often equivalent to water immersion.

The above precautions also apply to such accessories as pumps, magnetos, generators, instruments, propellors, carburetors, turrets, radio and photographic equipment.

Lockheed Propeller Expert Praises Nazi Air Equipment

German plane designers have accomplished much in the development of automatic controls, said John D. Waugh, chief propeller instructor for Lockheed in England since 1942, in a New York interview last week.

"In comparing German and American airplane equipment you must keep in mind that the Germans have been designing their planes for military use since 1932. We were busy producing planes for commercial uses and overlooked things like cannon channels in our propeller shafts," he said.

"From 1939 to this time the Germans have made constant improvements in their equipment, and from our 'surface' observations, there is yet no deterioration in their workmanship or materials."

Waugh said German plane designers had worked to simplify plane operation through development of automatic controls. An example is a propeller with a throttle governor which automatically changes the pitch to provide maximum propulsion efficiency under all conditions.

Boeing's New Strato Laboratory

At Wichita, Boeing Airplane Co. has installed this strato chamber, which enables engineers to study conditions of low pressure and low temperature without resorting to the use of an actual airplane in flight.

Aircraft Accessories Corp. Now Seventh Ranking Radio Manufacturer in the Nation

The electronics division of Aircraft Accessories Corporation at Kansas City, Kan., has grown from a $5,018 per month net sale figure in November, 1940 to $2,800,000 monthly net sales in February 1944, placing the company as seventh ranking radio manufacturer in the country.

These figures were released by R. C. Walker, president of the company, during a recent visit to Los Angeles in which he outlined postwar plans for the division.

Walker pointed out that seven transmitter models are being built by the division, with six of the seven models designed by Aircraft Accessories. The company plans to continue manufacture of its transmitters for adaptation to commercial airline use and introduced new models which are now highly restricted.

A terrain indicator for private and commercial flying; inexpensive and simplified equipment for private instrument flying; railroad communication equipment of revolutionary nature, and a novel development for the non-flying, consumer market were revealed as coming projects for the company.

With Walker on his West Coast trip was C. N. Kimball, vice president and executive engineer of the division, under whose direction the electronics development and experimentation has progressed. Kimball set up the department in 1938, coming to the company from Radio Corp. of America. He is a graduate of Harvard and holds several television and radio patents.

173,000 Sick, Wounded Evacuated by Air in '43

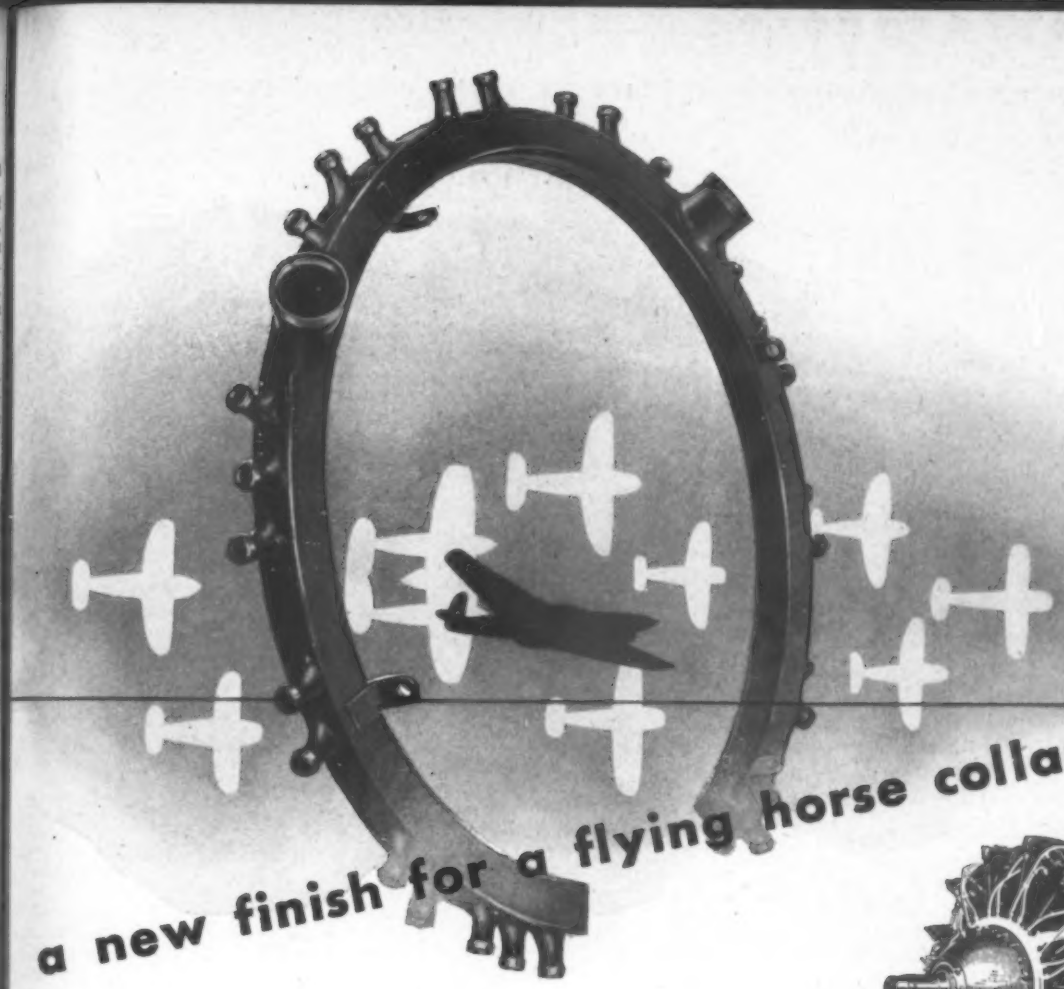
The War Department announces that more than 173,000 sick and wounded patients of United States and Allied forces were evacuated by American military aircraft throughout the world in 1943. The total, based on reports from the Air Surgeon, Maj. Gen. David N. W. Grant, to Gen. Arnold, is broken down as follows:

Eleven Air Forces overseas, 161,541; Eleven Air Transport Command wings overseas, 8,687; AAF, Continental, U. S. 3,299.

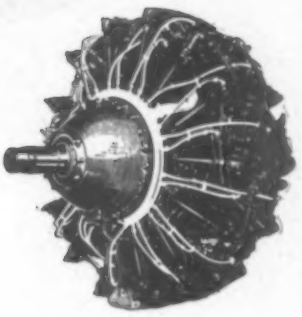
The figures refer to sick and wounded patients admitted to a medical service and include not only non-battle casualties but also individuals who have been air-evacuated more than once, from one hospital to another, the War Department statement said.

J. A. Krug in Navy

J. A. Krug, program vice chairman of the War Production Board, was sworn into the Navy April 11 as a lieutenant-commander. He is going on immediate active duty, it is reported.



a new finish for a flying horse collar!



RECENTLY, subcontractors of the largest manufacturers of airplane engines had a tough nut to crack. Cadmium, normally used to plate their ignition harness manifolds, was a critical material. A substitute had to be found.

They had to find a metal finish that would adhere stubbornly *to steel, brass and silver solder* through all ranges of temperatures—all degrees of humidity—and withstand the abuse of installation without chipping from the metal.

Result? The answer was found to be Roxalin's plastic base Paladin—a coating specially engineered for use on hard to finish metals where conventional lacquers and enamels won't adhere.

Accelerated weathering and salt spray tests prove the complete schedule, consisting of Paladin Primer followed by a coat of synthetic enamel, surpassed all government requirements established for this job.

What is *your* tough job? Our files of special purpose finishes for all branches of industry—and the skill and experience of our technical staff—are at your disposal. Write us for complete information.

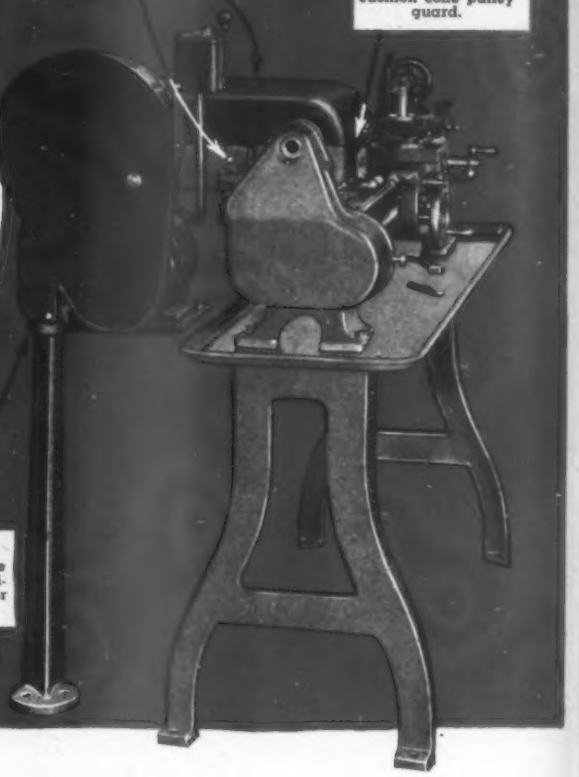
ROXALIN *Flexible* FINISHES
INCORPORATED
ELIZABETH • NEW JERSEY

WATCH ROXALIN IN AVIATION

RUBBER CUSHIONED COUNTERSHAFT* and 3-POINT SUSPENSION

TWO RUBBER CUSHIONED BEARINGS, one at each of the two hinge points connecting countershaft and headstock, absorb motor vibration.

TWO RUBBER BUTTONS cushion cone pulley guard.



ONE RUBBER CUSHION between motor mounting base and pedestal further eliminates transmission of motor vibration.

BRIEF SPECIFICATIONS

Swing over bed, 10½"... bed length, 43⅛"...spindle hole, $\frac{25}{32}$"...capacity, ⅝" with push type collet...6-position automatic indexing turret . . . stroke of turret, 4¼"...12 spindle speeds from 30 to 1450 r.p.m.... moving parts protected by ball bearings or self-lubricating bronze bearings.

No. 840
Quick Change Gear Turret Lathe with automatic apron

motor vibration absorbed

In Logan Lathes the smooth operation essential to finely finished precision work is doubly assured... first, by rubber cushioning at vital points... second, by carrying the countershaft on a three-point suspension. To absorb the motor's vibration, to prevent its transfer to the lathe proper, the patented Logan countershaft is rubber cushioned at all three of its main supporting points... the pedestal red and the two hinge pins. In addition, the cone pulley guard, which covers both countershaft and headstock, rests on rubber buttons. *The entire Logan countershaft assembly is so designed that at no point is there a direct metal-to-metal contact between countershaft and headstock.* Furthermore, the three-point suspension steadies the whole countershaft assembly so that it cannot rock. This combination of rubber cushioning and three-point suspension is another example of the advanced design that assures sustained accuracy, safe operation, long life, and high-speed, low-cost production in all models of Logan Lathes. Write today for your copy of the latest Logan Catalog.

LOGAN ENGINEERING CO.
CHICAGO 30, ILLINOIS

Logan

A NAME TO REMEMBER WHEN YOU THINK OF LATHES

*One of a series describing the finer features of Logan Lathes . . . Look for the next of the series

Cherry Blind Rivets of the self-plugging type are supplied with a notch in the pulling mandrel or stem.

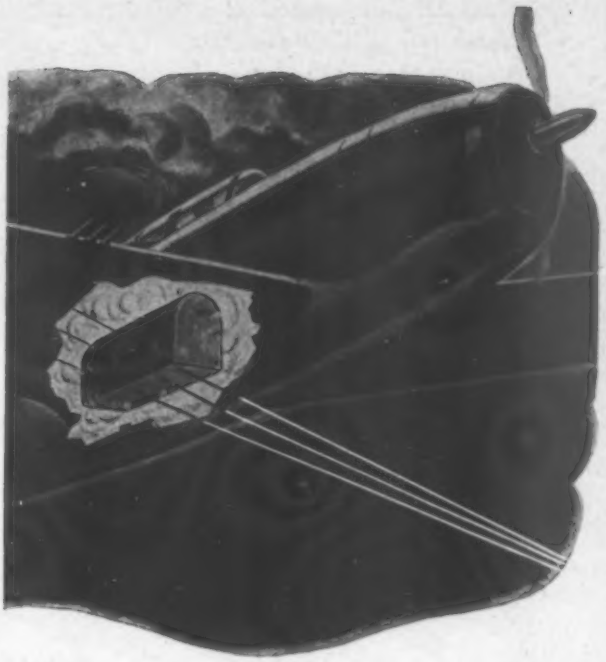
This notch inhibits the flow of metal in the upsetting process of forming the pulling head. As a result, Cherry Rivets are more uniform and are easier to apply in the blind or hard-to-get-at places.

Cherry Blind Rivets have broad tolerances in grip length and hole size for a blind rivet. But there are a few simple rules that should be followed to get the best results. These are set forth in a new, well illustrated handbook available to the riveter and inspector.

RIVETERS' MANUAL B-44—Request your free copy of the 36-page Cherry Blind Rivet Manual B-44. Address Department A-111, Cherry Rivet Company, 231 Winston Street, Los Angeles 13, California.

Cherry Rivets, their manufacture and application are covered by U. S. Patents issued and pending

Cherry Rivet
Company
LOS ANGELES, CALIFORNIA



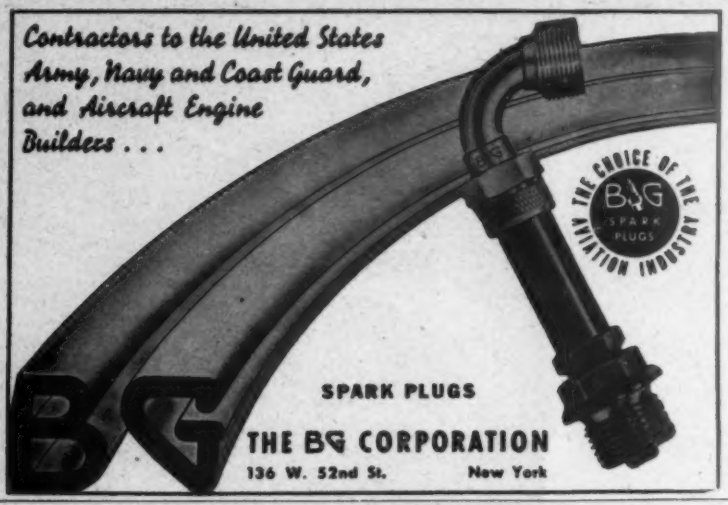
Taking the heat off tracers – before they hit!

● Explosive fumes from gasoline tanks, ignited by tracers, could easily blow up, send war plane crashing in flames. So our combat pilots flood the area around tanks with carbon dioxide gas from Kidde cylinders. The fire-smothering carbon dioxide replaces the dangerous vapors, robs tracer bullets of their incendiary effect.

Gases-under-pressure, harnessed by Kidde, are doing many kinds of work for the aviation industry. They're used to blast out fire in the air and at airports. They supply shot-up war planes with emergency power for brakes, landing gear, bomb-bay doors. They keep our forced-down flyers afloat.

Our Research and Development Department is constantly working out new devices to make flying safer and more efficient. Bring them *your* problem!

WALTER KIDDE & COMPANY, INC., 413 MAIN STREET, BELLEVILLE, N. J.


Contractors to the United States Army, Navy and Coast Guard, and Aircraft Engine Builders . . .
THE CHOICE OF THE AVIATION INDUSTRY
B&G SPARK PLUGS
SPARK PLUGS
THE BG CORPORATION
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WORLD'S PREMIER AIRPLANE FABRIC
LIGHTER
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Leading Manufacturers of Fabric and Tapes for the Aircraft Industry.
FLIGHTEX FABRIC
Export Representative—Aviquipo, Inc., 25 Beaver St., N. Y.
Cable Add.: 'Aviquipo'

Aircraft Computers

Hydrometer Kit

Takes the guesswork out of fuel-weight computation. The weight of gasoline, per gallon, varies with temperature and octane rating. This kit accurately measures the weight of the fuel actually being loaded and permits maximum and correctly distributed fuel load.

COX AND STEVENS AIRCRAFT CORPORATION

P. O. Box 30 Mineola, N.Y.

Manufacturing Digest

CONSOLIDATED VULTEE AIRCRAFT CORP. announces that fabrication of outer panels for the Navy version of the B-24 Liberator bomber is underway at its Vultee Field Division plant. The new project marks another step in the switch to emphasis on combat craft as production at the plant of BT-13 training planes tapers off, says a company announcement. Manufacture of more than 1,300 parts and 200 assemblies are involved in the outer panel operations. The company has switched Catalina PBY flying boat production from San Diego to New Orleans.

ALLISON DIVISION, General Motors Corp. announces that the 50,000th Allison engine has been accepted by the Army Air Forces. The total horsepower sent to war by Allison now totals 60,000,000, the division announces with "all production records for both engines and bearings being broken during March."

CURTISS-WRIGHT CORPORATION'S Propeller Division claims that a new C-W steel propeller blade, which was shipped overseas in quantity eight months after entering the drawing board stage, has assisted in giving the P-47 Thunderbolt 30% faster rate of climb.

GLENN L. MARTIN CO. reports that an estimated 2,500 different plastic parts are now being used in its four current airplane models—A-30 Baltimore, B-26 Marauder, PBM-3 Mariner, and Mars. "These vary all the way from a wide assortment of cable guides, fair leads, filler blocks, knobs, and name plates on all models to bulkhead doors and aileron quadrants on the Marauder, antenna masts and de-icer tanks on the Baltimore, turret swivel joints and aileron lock bar yokes on the Mariner, and lightweight phenolic flooring on the Mars.

STUDEBAKER CORPORATION'S William James, who is president of the American Society of Automotive Engineers, said in a recent interview in New York that conversion of military aircraft and automotive equipment for peacetime uses will be difficult. "Fighter planes used in the war probably will have a little too much power for successful peacetime use," he said. "At least you wouldn't want to turn one over to your 21-year-old son without some modifications."

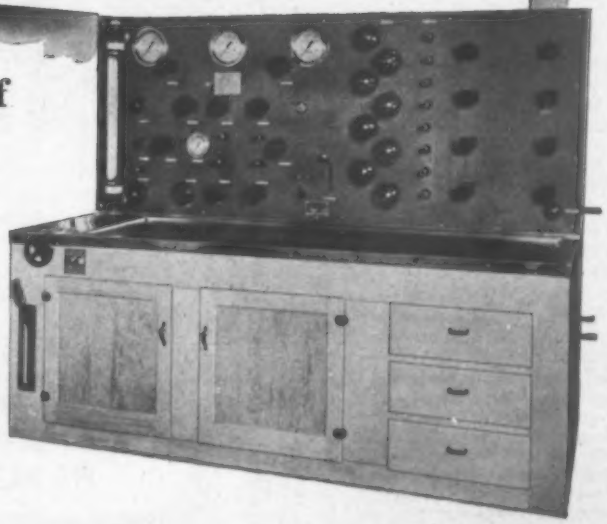
FORD MOTOR CO. announces that more than 3,000 four-engined B-24 Liberator bombers have been built at the Willow Run Bomber Plant. Of this total, 2,000 bombers were in completed, flyaway form, and the remainder were knocked-down for shipment to final assembly plants elsewhere in compliance with the War Department program, the company says.

BOEING AIRCRAFT COMPANY'S Seattle Plant 2 will be converted from manufacture of Flying Fortresses to production of the new Boeing B-29 Superfortress, Philip G. Johnson, president, announces. A feature of the conversion plan is that all available manpower will be utilized during the changeover. The plan has been so laid out as to require no shutdowns or layoff of employees, Johnson says.

LOCKHEED AIRCRAFT CORP. announces the opening of an operational testing station, one of the few "television sites" in the Los Angeles metropolitan area. The station, costing $100,000, stands on a summit in the Santa Monica Mountains, its beam unbroken by hills or buildings. It is strategically located to command all aircraft plants in Southern California, the passes to the interior valleys, and every area used for flight test of aircraft.

FREE ENLARGEMENTS (14" wide) of this cartoon by Edmund Duffy, three-times winner of the Pulitzer Prize, are available. Write, on your business letterhead, to: Bruce Livie, President, Liberty Motors & Engineering Corp., Baltimore-1, Md.

Quickly Tests All Types of Hydraulic Equipment for Aircraft



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Advertisers In this Issue

Company	Page
Adel Precision Products Corp	4th Cover
Aeroquip Corporation	3rd Cover
Air Express Division Railway Express Agency	42
Aircooled Motors Corporation	29
Aircraft Accessories Corporation	72-73
American Phenolic Corporation	62 and 66
Atlantic Rayon Corporation	88
Aviation Enterprises	51
B G Corporation	88
B-H Aircraft Company	90
Bell Aircraft Corp.	36-A
Bendix Aviation Corporation The Pacific Division	59
Breeze Corporations, Inc.	24-B
Canadian Pacific Air Lines, Inc.	5
Cherry Rivet Company	8
Cox and Stevens Aircraft Corp.	88
Curtiss-Wright Corporation Airplane Division	36-B
Curtiss-Wright Corporation Propeller Division	24-A
Curtiss-Wright Technical Institute	13
Delco Radio Division of General Motors	43
Doak Aircraft Company	71
Edo Aircraft Corporation	39
Foote Bros. Gear and Machine Corp.	
General Tire and Rubber Company	
Globe Aircraft Corporation	57
Gulf Oil Corporation	41
Hamilton Standard Propellers	34
Hayes Industries, Inc.	5
Irving Air Chute Company	55
Jacobs Aircraft Engine Company	48
Kellogg Switchboard & Supply Company	4
Kidde, Walter, & Company, Inc.	87
Liberty Motors & Engineering Company	89
Littelfuse, Inc.	70
Logan Engineering Company	8
Macwhyte Company	78
Mallory, P. R., & Co., Inc.	79
Martin, The Glenn L., Company	23
McDonnell Aircraft Corporation	2nd Cover
Otto Aviation Corporation	76
Phillips Petroleum Company	8
Pioneer Parachute Company	67
Resistoflex Corporation	77
Reynolds Metals Company	46-47
Roebling's, John A., Sons Co.	31
Rohr Aircraft Corporation	83
Roxalin Flexible Finishes, Inc.	85
Ryan Aeronautical Company	60
Scott Aviation Corporation	69
Simmonds Aerocessories, Inc.	33
Sperry Gyroscope Company	12
Standard Oil Company of New Jersey	21
United Air Lines	65
Weatherhead Company	45
Western Air Lines, Inc.	50
Western Electric Company, Inc.	14
White Motor Company	63
Whiting Corporation	81
Wilcox Electric Company	26
Wittek Manufacturing Company	6

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Delta Airlines	23	25	23	25
Inland Airlines	3	3½	3⅛	3⅝
Mid-Continent	5¾	6	6	6¼
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Rohr Aircraft	6	6⅜	6⅜	6⅝
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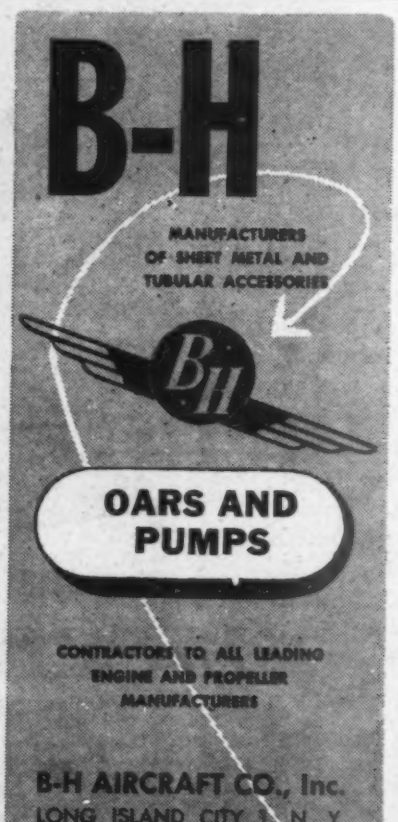
Taylorcraft Com.	1¾	2	1⅞	2
Taylorcraft Pfd.	5¾	6¼	5¾	6¼
Timm	35c	45c	35c	45c
Utd. Aircraft Prod. Pfd.	15¼	16	15¼	16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